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*Jane A. Walker*  
Jane A. Walker

April 23, 2004  
Date

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Ex Parte Gassenmeier et al.  
Appeal No. \_\_\_\_\_

Applicant: Gassenmeier et al.  
Serial Number: 09/800,624  
Filed: March 7, 2001  
Confirmation No.: 7473  
Art Unit: 1761  
Examiner: Wong, Leslie A.  
Title: **ORGANOLEPTIC COMPOSITIONS: USE OF 3-MERCAPTO  
ALKANOIC ACID ESTERS AS FLAVOR INGREDIENTS**  
Attorney Ref. No.: GRISA-710

Cincinnati, Ohio 45202

April 23, 2004

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P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL OF REPLY TO EXAMINER'S ANSWER**

Attached are the following documents:

- Reply to Examiner's Answer;
- In re Shetty, 195 USPQ 753 (CCPA 1977);
- Kloster Speedsteel AB v. Crucible Inc., 230 USPQ 81 (Fed Cir 1986);
- In re Rijckaert, 28 USPQ2d 1955 (Fed Cir 1993); and
- In re Spormann and Heinke, 150 USPQ 449 (CCPA 1966).

Appellant does not believe there is any fee due with this transmission.  
However, the Examiner is authorized to charge any such fee to Deposit Account No.  
23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By Beverly A. Lyman  
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**REPLY TO EXAMINER'S ANSWER**

This is a reply to the Examiner's Answer to Appellants' Brief on Appeal,  
dated April 8, 2004 (Paper No. 0404).

The Examiner states "The observation of an inherent characteristic

cannot be basis [*sic*] for patentability”, citing *In re Best* 195 USPQ 430 and *In re Jones* 1941 CD 686 (applicant is not familiar with the “CD” reference and believes the Examiner miscited *In re Jones*).

Applicants respectfully disagree with the Examiner’s inherency rejection. The pending claims are rejected under 35 U.S.C. § 103(a) as obvious. However, the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known, and obviousness cannot be predicated on what is unknown. *In re Shetty* 195 USPQ 753, 757 (1977).

*Shetty*, like the present application, is a chemical case claiming compositions of certain adamantane compounds and methods of using them to curb appetite in animals. The prior art taught structurally similar compounds for use as antiviral agents. The Patent Office rejected *Shetty*’s claims as obvious, reasoning that administering the prior art compounds for an antiviral effect would inherently curb appetite. The C.C.P.A. reversed, holding that nothing in the art suggested using the structurally similar prior art adamantane to curb appetite until *Shetty*.

Other cases hold similarly (“inherency and obviousness are distinct concepts”. *Kloster Speedsteel v. Crucible Inc.*, 230 USPQ 81, 88 (Fed. Cir. 1986); “Obviousness cannot be predicated on what is unknown.” *In re Rijckaert* 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) citing *In re Spormann* 150 USPQ 449, 452 (CCPA 1966)).

In the present application, the claims are rejected as obvious over Chiba, the primary reference, in view of Ashurst. Chiba did not appreciate or recognize the chemical’s fragrance and flavor properties. For the reasons set forth

in Applicants Brief on Appeal, one of ordinary skill in the art would not appreciate or recognize what applicant did; namely, that the compounds provided desirable flavor/fragrance properties. As set forth in *Shetty*, that which is inherent in the prior art cannot form a proper basis for an obviousness rejection because obviousness cannot be based on what is unknown.

### **Conclusion**

For the reasons set forth in the Brief on Appeal and this Reply, appellants respectfully request that the Board reverse the Examiner's rejection.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

By Beverly A. Lyman  
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[The following decision was designated by the board to appear in digest form only.]

# **Patent and Trademark Office Trademark Trial and Appeal Board**

Raytheon Company  
v. American Professional Equipment Leasing Corporation

Decided Mar. 26, 1976  
Released May 25, 1976

Trademark opposition No. 53,363 by Raytheon Company, against American Professional Equipment Leasing Corporation, application, Serial No. 384,165, filed Feb. 18, 1971. Opposition dismissed.

## **TRADEMARKS**

**Class of goods — Particular cases — Not similar (§67.2071)**

Leasing of medical equipment; electrical apparatus including medical products.

No. 76-1425 Decided June 6, 1977

Maurice A. Garbell, Inc.  
v. Boeing Co.

Petition for writ of certiorari to Court of Appeals for the Ninth Circuit denied.  
Opinion below; 192 USPQ 481 (Pat. No. 2,441,758).

# **Court of Customs and Patent Appeals**

In re Shetty

No. 77-515 Decided Nov. 17, 1977

## **PATENTS**

**1. Patentability — Invention — Specific cases — Chemical (§51.5093)**

It is obvious and there is sufficient motivation to person skilled in chemical or pharmaceutical arts to substitute ethylene link between adamantane ring and amine for structurally-similar prior art methylene link.

**2. Patentability — Invention — In general (§51.501)**

**Patentability — Invention — Specific cases — Chemical (§51.5093)**

Fact that claimed method might be inherent in teachings of prior art is immaterial if one of ordinary skill in art would not appreciate or recognize that inherent method; mere hindsight assertion that corresponding dosages of prior art compounds useful for combating microbial infestation, in light of which claimed compound is obvious, renders claimed method for appetite control obvious is untenable; inherency of advantage and its obviousness are entirely different questions; obviousness cannot be predicated on what is unknown.

**Particular patents — Adamantane Derivatives**

Shetty, Anorectic Adamantane Derivatives and Method of Using Same, rejection of claim 52 affirmed; rejection of claims 2-5 and 51 reversed.

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Bola Vithal Shetty, Serial No. 171,736, filed Aug. 13, 1971. From decision rejecting claims 2-5, 51, and 52, applicant appeals. Modified.

Carl A. Hechner, Jr., and Edward A. Sager, both of Philadelphia, Pa., for appellant.

Joseph F. Nakamura (Jack E. Armore, of counsel) for Commissioner of Patents and Trademarks.

Before Markey, Chief Judge, Rich, Baldwin, and Lane, Associate Judges, and Morgan Ford, Associate Judge, United States Customs Court.

Rich. Judge.

This appeal is from that portion of the July 30, 1976, decision of the Patent and Trademark Office (PTO) Board of Appeals (board) rejecting claims 2-5, 51, and 52 in application serial No. 171,736, filed August 13, 1971, entitled "Anorectic Adamantane Derivatives and Method of Using Same." The board rejected the claims under 35 USC 103 on new grounds, as provided in 37 CFR 1.196(b), as obvious from Brake<sup>1</sup> in view of Narayanan,<sup>2</sup> Bernstein et al.,<sup>3</sup> and Bernstein.<sup>4</sup> We affirm the rejection of composition claim 52 and reverse the rejection of method claims 51 and 2-5.

## **The Invention**

The invention pertains to a method, as defined in claims 51 and 2-5, of curbing appetite in animals by administering certain adamantane compounds.<sup>5</sup> The invention also pertains to the unit dosage form of a composition for curbing appetite comprising such an adamantane compound and a pharmaceutically acceptable carrier as defined in claim 52.

In the specification, appellant identifies his claimed compounds as follows:

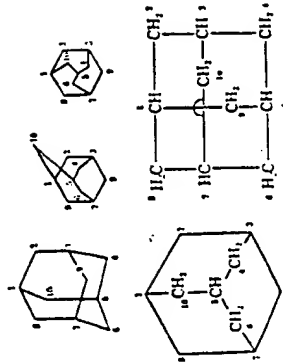
<sup>1</sup> U.S. Patent No. 3,489,802, issued Jan. 13, 1970, on application serial No. 610,779, filed Jan. 23, 1967.

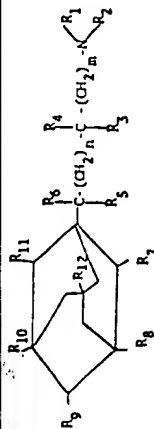
<sup>2</sup> U.S. Patent No. 3,501,511, issued Mar. 17, 1970, on application serial No. 661,781, filed Aug. 21, 1967.

<sup>3</sup> U.S. Patent No. 3,270,036, issued Aug. 30, 1966, on application serial No. 493,899, filed Oct. 7, 1965.

<sup>4</sup> U.S. Patent No. 3,320,249, issued May 16, 1967, on application serial No. 470,930, filed July 9, 1965.

<sup>5</sup> Adamantane is the trivial name assigned to tricyclodecane. Its structural formula can be represented in any of the following ways:





or their pharmaceutically acceptable acid addition salts, wherein:

$R_1$  = H, lower alkyl, aralkyl, aralkyl substituted with  $\text{NH}_2$ , OH,  $\text{OCH}_3$ , halogen, alkyl,  $\text{NO}_2$ ; phenoxyalkyl or phenoxyalkyl substituted with  $\text{NH}_2$ , OH,  $\text{OCH}_3$ , halogen, alkyl, or  $\text{NO}_2$ ; acyl such as formyl or acetyl.

$R_2$  = H, lower alkyl, COO-lower alkyl, aralkyl, aralkyl substituted with  $\text{NH}_2$ , OH,  $\text{OCH}_3$ , halogen, alkyl,  $\text{NO}_2$ ; phenoxyalkyl or phenoxyalkyl substituted with  $\text{NH}_2$ , OH,  $\text{OCH}_3$ , halogen, alkyl, or  $\text{NO}_2$ ; acyl such as formyl or acetyl.

$R_3$  and  $R_4$  can be joined together to form, with the nitrogen, a heterocyclic ring (e.g.,



$R_5$  = H, lower alkyl, or alkynyl

$R_6$  = H, lower alkyl, or alkynyl

$R_7$  = H, OH, halogen, or lower alkyl

$R_8$  = H, OH, halogen, or lower alkyl

$R_9$  and  $R_{10}$  together may represent a carbonyl oxygen

$R_{11}$  = H, lower alkyl, halogen, hydroxy, alkoxy,

amino or substituted amino, trifluoro-

methyl, sulfamyl, nitro, phenyl

$R_{12}$ ,  $R_{13}$ ,  $R_{14}$ ,  $R_{15}$  are any of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$ ,  $R_{15}$

$n$  = 0 to 4

$m$  = 0 to 4

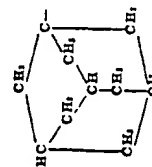
Independent claim 51 defines the "method of curbing appetite in an animal which comprises administering to the animal an amount effective to curb appetite of a compound" of the above formula.

## The References

Brake describes a process for improving the yield of  $\alpha$ -methyl multicyclic methylamines, one of which is  $\alpha$ -methyl-1-adamantanemethylamine, illustrated as:

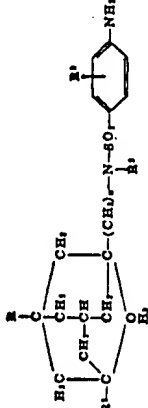


where R is \* \* \*



and is described as being useful as an antiviral agent in animals

Narayanan teaches adamantyl sulfonamide compounds, useful as antimicrobial agents, e.g., as antiviral agents, of the formula:

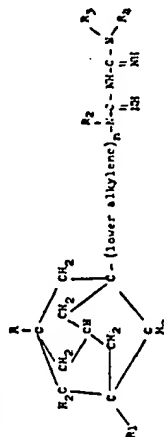


(I)

wherein R and R' each is hydrogen, halogen, lower alkyl, phenyl or phenyl-lower alkyl, R' is hydrogen or lower alkyl, R' is hydrogen, lower alkyl, lower alkoxy, halogen, or halo-lower alkyl and n is 0, 1 or 2, and salts thereof.

Narayanan also teaches the use of his compounds in dosages corresponding to those of appellant.

Bernstein et al. pertains to adamantyl biguanides of the formula:

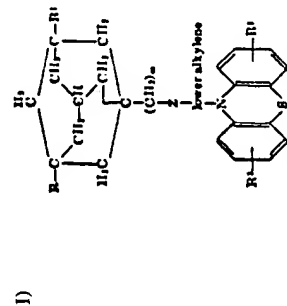


and to acid-addition salts thereof.

In Formula I, R and R' each is hydrogen, halogen, lower alkyl, phenyl or lower alkoxy, R, R', and R' each is hydrogen, lower alkyl or phenyl-lower alkyl and n is 0 or 1.

These compounds are hypoglycemic agents effective in reducing blood sugar content in mammals.

The compounds of the Bernstein patent are illustrated by the following formula:



and to acid-addition and quaternary ammonium salts thereof.

These compounds are adamantyl derivatives of phenothiazines, therapeutically active as central nervous system depressants.

## The Rejection

The examiner rejected appellant's claim-composition and method as obvious under 35 USC 103 in view of the teaching in Brake of administering to animals structurally similar adamantane derivatives "analogous" to those claimed. The Bernstein and Narayanan patents were cited to show similar compounds in the art. The examiner reasoned that the composition claim would have been obvious from the prior art because the respective compounds differ merely by a methylene group, i.e., the instant compounds have at least an ethylene link between the adamantane ring and the amine, whereas the prior art compound has a methylene link. This "minor molecular modification" was further asserted to be made obvious by the Bernstein and Narayanan patents, which disclose lower alkylene links between adamantane and other moieties and are directed to pharmaceutical uses.

The board treated the examiner's rejection as relying upon Brake alone and as citing the Bernstein and Narayanan patents to show the state of the art. The board did not sustain the rejection of claims 2-5, 51, and 52 as obvious from Brake alone because Brake's failure to disclose an amount of his compound effective as an antiviral agent renders unobvious the administration of "adjacent homologs of Brake's compound 'in an amount effective to curb appetite' \* \* \*." Similarly, the board did not agree that appellant's composition in an "appetite curbing amount" would have been obvious from Brake alone.

Under 37 CFR 1.196(b), the board made a new ground of rejection under 35 USC 103 for obviousness from Brake in view of the Bernstein and Narayanan patents. The board agreed with the examiner that appellant's compounds having an ethylene linkage would have been obvious in view of Brake's corresponding adjacent homolog (methylene linkage). Relative to the method claims, the board found sufficient motivation in the prior art to administer Brake's compound and adjacent ethylene "homologs" as antiviral agents, and concluded that administering appellant's compounds in appetite-curbing amounts would have been obvious from Brake and Narayanan since the amounts suggested by Narayanan to achieve antiviral effects encompass the amounts intended and claimed by appellant.

## The Arguments

Appellant contends that, after refusing to sustain the examiner's rejection on the basis

of Brake alone, the board erred in rejecting the method claims by considering Narayanan in addition to Brake. Appellant argues that Narayanan's reference to dosage for treating viral infection is an improper basis for rejection. It is urged that the board mistakenly assumed that appetite-suppressant effects of appellant's compounds would be readily recognized from treating virus-infected animals with a related compound. It is also urged that the board ignored differences in treatments for viral infection and obesity, and that therefore Narayanan's dosage cannot be said to result in effective anorexia. Relative to the claimed composition, appellant states that there is an appreciable difference between the structure of the compounds of the claim and the prior art compounds, and that the former would not have been obvious because the motivation to make the required structural variation is absent.

The solicitor responds by arguing that in the absence of comparative evidence of any unexpected difference in the properties of appellant's and Brake's compounds, the compounds of the claim would have been obvious from and unpatentable over the structurally closely related compound disclosed by Brake. It is argued that Brake and Narayanan render obvious appellant's pharmaceutical carrier and "unit dosage form." As to the method claims, the solicitor contends that Narayanan discloses adamantyl compounds as antiviral agents in dosages that correspond to and would suggest similar and inherently appetite-curbing amounts of the Brake antiviral compound. The solicitor supports the board position that because appellant's compounds are homologous and there is sufficient motivation in the prior art to administer Brake's compound as an antiviral agent, appellant's different purpose does not render the method claims unobvious.

## Opinion

We note at the outset that the ethylene linkage of appellant's compound closest to the prior art ( $\beta$ -(1-adamantyl)- $\alpha$ -methylthylamine) is referred to by the examiner as "analogous" to the methylene linkage of Brake's  $\alpha$ -methyl-1-adamantanemethylamine and by the board as a "homolog." Since the appellant has not challenged either of these classifications, we proceed on the assumption that he accepts the inference that his compounds, whether homologs or analogs, would be expected to have similar properties to the prior art compound. Whether the adamantyl compounds in question are properly classified according



to the usual definitions of "homolog" and "analog," we shall not consider inasmuch as appellant has not argued the point.

The solicitor has taken the position that absent comparative evidence demonstrating any unexpected difference in the properties of the compounds, the claimed composition would have been obvious from an unperturbed table over the structurally closely related compound disclosed in Brake. On the other hand, appellant contends that the presence of the ethylene rather than the methylene group constitutes "an appreciable difference in the claimed compound and the prior art compounds," and relies on *In re Taborsky*, 502 F.2d 775, 183 USPQ 50 (CCPA 1974) for support of his argument that without some teaching of motivation to make the required molecular variation, a finding of obviousness based on structural similarity is improper.

[1] Regarding this issue of structural similarity, we agree with the solicitor and the PTO position. The examiner noted the difference of a mere methylene group between the compound of the claim and the prior art compounds, cited the Bernstein and Narayanan references showing the state of the art as prior art knowledge of use of lower alkylene links between adamantane and other moieties, and concluded that "this minor molecular modification would clearly be obvious to the pharmaceutical chemist." We do not accept appellant's contention that the adjacent alkylene link in question constitutes an "appreciable difference" in the compounds. We think that a person skilled in chemical and/or pharmaceutical arts would not hesitate to extend the alkylene linkage of the prior art compound. Further, we note that appellant's compound closest to the prior art and its synthetic preparation are disclosed in Narayanan as one of a group of compounds for producing his adamantyl sulfonamide. This leaves no room for doubt that the prior art knowledge renders appellant's compound structurally similar and provides sufficient motivation to make it.

Moreover, appellant has no basis for relying on *Taborsky*, supra. Unlike the present case, the prior art of record in *Taborsky* expressly limited the scope of "halogen" to exclude appellant's claimed fluorosalicylanilide compounds and stated "several disadvantages in practice" of free salicylanilides. 502 F.2d at 781, 183 USPQ at 55 (emphasis supplied). Appellant here has shown no such reason to preclude the conclusion that appellant's compounds are

structurally similar to the prior art compounds.

Confronted with PTO evidence of obviousness, appellant has offered no evidence of unobviousness, as by showing an actual difference in properties between his compounds and the prior art compounds. In *re Hoch*, 57 CCPA 1292, 428 F.2d 1341, 166 USPQ 406 (1970). Appellant merely shows that his novel compounds are appetite suppressants whereas the reference compounds are not so known. Further, appellant has not indicated whether his compounds are antitumoral, as is Brake's prior art compound. Presented with such an absence of comparative or other evidence with respect to the properties of the compounds and the claimed composition, we hold that composition claim 52 would have been obvious from and unpatentable over the prior art.

[2] Regarding method claims 51 and 2-5, the solicitor agrees with the board that:

\* \* \* the compounds of claim 51 are obvious from and unpatentable over the corresponding Brake compound and the Narayanan disclosure of a dosage which corresponds to appellant's disclosed appetite curbing dosage (therefore, inherently appetite curbing). [Emphasis added.]

We cannot accept this conclusion. The issue here is whether the claimed method of curbing appetite would have been obvious. That appellant's "amount effective to curb appetite," corresponds to or inheres in Narayanan's amount "to combat microbial infestation" does not persuade us of the obviousness of appellant's method. As this court said in *In re Naylor*, 54 CCPA 902, 905-06, 369 F.2d 765, 768, 152 USPQ 106, 108 (1966):

[Inherency] is quite immaterial if, as the record establishes here, one of ordinary skill in the art would not appreciate or recognize that inherent result. \* \* \*

\* \* \* we find nothing in the record which would afford one of ordinary skill reason to anticipate that a trial \* \* \* [of the combined prior art teachings] would be successful in producing the polymer recited in the claims.

The Patent Office has failed to show a reasonable expectation, or some predictability, that Brake's compound would be an effective appetite suppressant if administered in the dosage disclosed by Narayanan. The mere hindsight assertion that corresponding dosages render appellant's method obvious is untenable.

Prior to appellant's disclosure, none of the adamantane compounds in any of the references before us suggested a use, much less a dosage, for curbing appetite. What we said in *In re Spormann*, 53 CCPA 1375, 1380, 363 F.2d 444, 448, 150 USPQ 449, 452 (1966), relative to inherency applies equally here:

As we pointed out in *In re Adams*, 53 CCPA 996, 356 F.2d 998, 148 USPQ 742 (1966), the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

Accordingly, the decision of the board is affirmed as to claim 52 and reversed as to claims 51 and 2-5.

### District Court, N. D. Illinois, E. Div.

Radial Lip Machine, Inc.

v. International Carbide Corporation, et al.

No. 73 C 2945 Decided Sept. 29, 1977

### PATENTS

#### 1. Pleading and practice in courts — Jury trial — In general (§53.571)

Accused patent and trademark infringers whose counterclaim to complaint seeking damages demands damages for breach of contract and fraud, and payment of royalties under assignment contract, and presents several grounds for declaratory relief that would have given rise to right to jury trial if raised by coercive action, are entitled to jury trial on all factual issues common to legal and equitable claims.

#### 2. Pleading and practice in courts — Jury trial — In general (§53.571)

Case in which only two competing corporations are involved, length of trial is estimated to be three weeks, there is no inundation of large number of documents, and patent validity is undisputed does not surpass limits of jury competence.

Action by Radial Lip Machine, Inc., against International Carbide Corporation, and Numac Research Industries, Inc., for patent and trademark infringement, in which defendants counterclaim for

declaratory and equitable relief and damages. On plaintiff's motion to strike defendants' demand for jury trial. Motion denied.

William T. Kirby, Roger McFadden, and Hubachek, Kelly, Rauch & Kirby, all of Chicago, Ill. (Robert L. Harmon, Richard H. Compere, and Hume, Clement, Brinks, William, Olds & Cook, Ltd., all of Chicago, Ill., and Vincent L. Barker, Jr., and Owen & Owen, both of Toledo, Ohio, of counsel) for plaintiff.

Jack E. Dominik, Alan B. Samlan, and Dominik, Knechtel, Godula & Demeur, all of Chicago, Ill., for defendants. Marshall, District Judge.

This is a civil action for patent and trademark infringement and breach of contract. The parties are three corporations involved in the development, manufacture and marketing of a "radial lip" drill which is used in the metal cutting industry. Plaintiff has moved to strike defendants' demand for a jury trial.

The factual background reveals a series of corporate transactions which have transferred patent rights and created numerous contractual obligations between the parties. In the late 1960's officers of the two defendant corporations, International Carbide Corporation and Numac Research Industries, Inc., developed the radial lip drill and applied for patents on the drill, its grinding apparatus and the grinding method. Defendants then entered into various licensing agreements with other corporations. In 1969, defendants executed an agreement with Calar, a holding company. The Calar agreement basically provided that in return for 10% of Calar's stock and a share of outstanding rents and royalties from leases and licensing agreements, defendants would transfer their patent rights and those outstanding contracts and licenses to Calar. Defendants also agreed to perform certain research and technical services for Calar and received a license to make, sell and resharpen radial lip drills. Calar subsequently transferred its interest in the agreement, including the drill patents and trademark, first to its wholly owned sub-

<sup>1</sup> - The predecessor of these two corporations was Radial Lip Drill Company, which is to be distinguished from two other similarly named corporations in this case, Radial Lip Machine Corporation (a subsidiary of Calar) and Radial Lip Machine, Inc. (the present plaintiff).

such as filling of longfelt and unsolved need, failure of others, and wide acceptance of claimed invention.

#### 6. Accounting — Increased or treble damages or profits (§11.35)

Federal district court's refusal to impose increased damages not willful, but if such found infringing not willful, but if such finding is implicit, it is clearly erroneous, in view of accused infringer's failure to seek advice of counsel, despite patent holder's warnings, and its admitted "strategy" of continuing infringement in hope that court would hold patent invalid.

#### 7. Injunction — In general (§40.1)

#### Infringement — Contributory infringement (§39.30)

Corporation that was created by infringer immediately after conclusion of patent infringement trial and before judgment, in order to evade effect of possible injunction, and that purchased facility infringer used to manufacture products found to infringe, is bound by injunction, and may appeal federal district court's refusal to modify it, despite agreement between infringer and corporation that corporation accepted no liability for infringement.

#### Particular patents — Alloys

3,561,934, Steven, Sintered Steel Particles Containing Dispersed Carbides, holding of validity affirmed.

3,746,518, Holtz, Jr., Alloy Composition and Process, holding of validity of claim 30 affirmed.

Appeal from District Court for the Western District of Pennsylvania, Diamond, J.; 226 USPQ 36.

Consolidated actions by Crucible Inc., against Stora Kopparbergs Bergslags AB, and Uddeholms AB, for patent infringement, and by Stora Kopparbergs Corporation, and Uddeholm Steel Corporation, against Crucible Inc., Crucible Materials Corp., et al., for declaration of patent invalidity. From judgment for Crucible Inc., et al., Kloster Speedsteel AB, et al., appeal. Affirmed in part and remanded in part.

See also 224 USPQ 714 and 226 USPQ 842.

Francis J. Hone, and Brumbaugh, Graves, Donohue & Raymond, both of New York, N.Y. (Richard S. Clark, and Brumbaugh, Graves, Donohue & Raymond, both of New York, N.Y., on the brief) for Stora, et al.

#### PATENTS

#### 1. Patentability — Anticipation — In general (§51.201)

Federal district court properly found that prior art patent did not anticipate claimed alloy body, despite evidence that prior art figure could be scaled to match claims limitations, since nothing in prior art patent discloses actual size of carbide particles.

#### 2. Patentability — Anticipation — Process (§51.225)

#### Patentability — Invention — Specific cases — Chemical (§51.5093)

Testimony, in declaration of infringement action, as to whether processes of prior art would result in product having properties of claimed alloy body, which led federal district court to discuss processes in its opinion, does not establish that court erroneously based its judgment on view that claimed invention was process.

#### 3. Patentability — Invention — Specific cases — Chemical (§51.5093)

Claimed alloy body's achievement in doing what those skilled in art suggested should not be done—of using lower temperatures and limiting carbide size—is strongly probative of non-obviousness.

#### 4. Patentability — Tests of — Skill of art (§51.707)

Patent challenger's contention that federal district court erred when it did not find specific level in art is without merit, since patent challenger was not prejudiced by court's having looked to other inventors, rather than one of ordinary skill.

#### 5. Patentability — Evidence of — Commercial success — In general (§51.4551)

Patent challenger's attempt to denigrate commercial success of claimed invention, to which it and patent holder had earlier stipulated, by citing delay between patent application and commercial success, is not valid, since mere passage of time may not be enough to discredit nexus with commercial success, since patent challenger has shown no basis for its attack, and since federal district court attributed proper weight to other objective evidence,

although a surname, POSTEN has some other significance to the purchasing public. However, applicant's showing does not satisfy this burden. The declaration filed by applicant does nothing to establish that POSTEN has any other significance. It establishes nothing except that twenty-three individuals have never met anyone named POSTEN. And the fact that there are two telephone directories which do not list anyone named POSTEN proves only that no one by that name lives in the areas covered by those directories or, if they do, they do not have listed telephone numbers.

[1] If applicant is attempting to prove that POSTEN is not a common surname (for which its evidence is not necessarily convincing), there are several cases which hold that even rare surnames are not registrable on the principal register. See *In re Glen Raven Knitting Mills, Inc.*, 153 USPQ 134 (TTAB 1967) and *In re Royal Overseas Traders, Inc.*, 184 USPQ 575 (TTAB 1974). Proving that some telephone directories are devoid of POSTEN references and that twenty-three people do not know any one called POSTEN<sup>2</sup> does not show that POSTEN has a significance apart from its use as a surname.

In view of the foregoing, the refusal to register is affirmed.

<sup>2</sup> These individuals have not been shown to be experts on surname usage in the U.S. or on trademark law.

which FAIRBANKS could not be considered primarily merely a surname.

The Examining Attorney in this case has submitted copies of telephone listings from the Maryland Suburban Washington directory (showing four individuals named POSTEN) and the Greater Miami directory (showing seven POSTEN listings). In addition, he has filed Lexis/Nexis printouts containing articles written about twelve different individuals whose surname is POSTEN, including a judge, an author, a baseball player, a wrestler, a musician, a felon, a salesman, a policeman and a former White House social secretary.

In rebuttal, applicant filed copies of pertinent pages from the Northern Virginia and District of Columbia telephone directories to show the absence of any POSTEN listings therein as well as a declaration signed by twenty-three individuals (including the attorney of record) stating that they are familiar with names currently in use in the United States; that POSTEN is not considered by them to be primarily merely a surname; and that they have never known anyone with the surname POSTEN.

While telephone listings alone may not always be sufficient to establish that a term is primarily merely a surname [See *In re Directional Marketing Corporation*, 204 USPQ 675 (TTAB 1979)] they are credible evidence to be considered. They show that there are individuals who bear the name in question. The directory listings provided by the Examining Attorney in this case, coupled with the Lexis/Nexis material are, in our view, sufficient to establish a prima facie case that POSTEN is primarily a surname and thus to shift the burden to the applicant to show that,

2 *Wayne A. Cross, New York, N.Y. (William Dunagan, Rehoul, MacMurray, Hewitt, Baynard & Kristol, Arthur D. Gray, Stuart J. Sinder, William J. McNichol, Scott A. Wisser, and Kenyon & Kenyon, of counsel) for Kloster, et al.*

*For R. Farabow, Jr., and Finnegan, Henderson, Farabow, Garrett & Dunner, both of Washington, D.C. (Michael C. Elmer, Allen M. Sokal, and Finnegan, Henderson, Farabow, Garrett & Dunner, on the brief) for Crucible, et al.*

*Before Markey, Chief Judge, Nichols, Senior Circuit Judge, and Newman, Circuit Judge.*

### Markey, Chief Judge.

Consolidated appeals from a judgment of the United States District Court for the Western District of Pennsylvania holding claim 30 of U. S. Patent No. 3,746,518 ('518 patent) and claim 4 of U. S. Patent No. 3,561,934 ('934 patent) valid and infringed. *Crucible, Inc. v. Stora Kopparbergs Bergslags AB*, 594 F. Supp. 1249, 226 USPQ 36 (W.D. Pa. 1984). We affirm in part and remand in part.

### Background

#### (1) Proceedings in the District Court

In 1974, Crucible, Inc. (Crucible), assignee of the '518 patent (issued July 17, 1973) to Frederick C. Holtz, Jr., on an application filed February 26, 1965), and of the '934 patent (issued February 9, 1971 to Gary Steven on an application filed September 11, 1967), charged Stora Kopparbergs Bergslags AB and Stora Kopparberg Corp. (Stora) with patent infringement in manufacturing and selling "ASP" steel products. On July 25, 1974, Stora filed a declaratory judgment action in the United States District Court for the District of New Jersey alleging patent invalidity, non-infringement, and violation of the antitrust laws. On October 4, 1974, Crucible sued Stora in the Western District of Pennsylvania, where the district court consolidated the

<sup>1</sup>Crucible Materials Corp., the successor in interest of Crucible, Inc., was added as a plaintiff in an order dated October 11, 1984.

<sup>2</sup>In 1977, Uddeholms AB purchased the division of Stora that manufactured ASP steel. Uddeholms and its American marketing subsidiary, Uddeholm Steel Corp., now called Uddeholm Corp., were joined as defendants and are included here under "Stora."

termination that Stora had not shown the claims invalid,<sup>3</sup> and Kloster contests the refusal to modify the injunction. In Appeal No. 85-2214, Crucible cross-appeals from the portion of the judgment refusing to find willful infringement and denying increased damages under 35 U.S.C. §284 and attorney fees under 35 U.S.C. §285. On stipulated motion, this court consolidated the appeals on June 14, 1985.<sup>6</sup>

#### (2) The Technology

The present field of technology is that of metal alloy compositions. The focus at trial was on "high speed" tool steels used to make metal cutting tools. High speed tool steels must possess properties of grindability, heat resistance, hardness, toughness, and dimensional stability. Those properties minimize tool replacement and resulting production line shutdowns.

High speed tool steels generally contain relatively large amounts of carbon and significant amounts of alloying elements that form metallic carbides distributed throughout the microstructure of the steel. Conventionally cast high speed tool steels have a microstructure characterized by an inhomogeneous distribution of coarse carbides, i.e., striations and stringers resulting primarily from the time required to cool the ingot. That carbide distribution adversely affects grindability and cutting efficiency.

Prior art workers investigated powdered metallurgical techniques. Those workers initially produced a particulate alloy, preferably by atomization, and then applied heat and pressure to consolidate the resulting powders into an integral product.

To achieve substantially full density, workers had to compact the powders at elevated temperatures. High temperatures, however, cause increased rate of carbide growth and agglomeration and loss of carbon. Low temperatures, on the other hand, render the powder insufficiently malleable for suitable densification. Thus, prior art workers had to choose between high densification and fine carbide size. The invention disclosed in the '518 patent made it possible for the first time to maintain fine, uniformly dispersed carbides while

dated March 25, 1985, from which Kloster also appeals (85-2274). See Fed. R. App. P. 4(a)(4).

<sup>4</sup>The issues of validity under 35 U.S.C. §112 and infringement are not contested on appeal.

<sup>5</sup>On November 4, 1985, this court dismissed the appeal of Fagersta AB in response to a stipulated motion of all parties.

achieving a fully dense product having satisfactory interparticle bonding.

#### (3) The Claims in Suit

Claim 30 of the '518 patent reads:

A consolidated integral alloy body which is substantially fully dense formed of a hot worked supersaturated solid solution of an inherently alloying composition, said alloy body consisting essentially of a continuous metallurgical phase with a uniformly dispersed hard phase of minute dispersed hard phase particle sizes that are substantially entirely less than three microns in maximum dimension, said alloying composition consisting essentially by weight from about 5% to about 5% carbon at least 10% of a hard phased forming element selected from the group consisting of Cr, W, Mo, Ti, Ta, Nb, Zr, Hf, V, and Al, and mixtures thereof, and the remainder base metal and incidental impurities, wherein said base metal is selected from the group consisting of cobalt, iron and nickel, and wherein the total amount of base metal is at least 30%.

Claim 4 of the '934 patent reads:

An article of manufacture as defined in claim 2, in the form of a hob for use in milling applications.

On May 2, 1978, Crucible disclaimed, under 35 U.S.C. §253, claim 1 and its dependent claim 2 of the '934 patent. Because it depends from and thus includes all limitations of claims 1 and 2, however, claim 4 properly reads:

As an article of manufacture, a metal body constructed of compacted particles of a high speed tool or die steel composition containing a metal component capable of reacting with carbon to form carbides, said reactive metal component being at least one metal selected from the group consisting of titanium, vanadium, molybdenum, zirconium, columbium, tungsten and tantalum, each of said particles having carbides of said reactive metal substantially evenly dispersed throughout, said body having a hardness of at least about 58 Rc and being characterized by size change uniformity upon austenitizing, quenching and tempering, the composition of said metal body [consisting] of, in percent, 0.80 to 3.00 carbon, up to 2 manganese, up to 1 silicon, up to 0.5 sulfur, up to 18.0 tungsten, up to 5 vanadium, up to 12 molybdenum, up to 10.0 chromium, up to cobalt and balance iron, with tungsten + molybdenum + chromium + vanadium being equal to at least 10 percent, [said metal body being] in the form of a hob for use in milling applications.

## Issues Presented

Whether the district court erred in: (1) refusing to hold the asserted claims invalid; (2) refusing to hold the patents unenforceable; (3) denying increased damages and attorney fees; and (4) enjoining Stora's "successors in interest and assigns."

## OPINION

## (1) Validity

To meet its burden at trial, Stora was required to prove by clear and convincing evidence facts compelling a conclusion of invalidity. See *Datascope Corp. v. SMEC, Inc.*, 776 F.2d 320, 323-24, 227 USPQ 838, 340-41 (Fed. Cir. 1985). To meet its burden on appeal, Stora must persuade this court that the district court committed reversible error in determining that it had failed to meet its burden at trial. It must do so by convincing us that the court's probative findings underlying its holdings on validity were clearly erroneous or that its legal conclusions on that issue cannot be supported by those findings or are incorrect as a matter of law. *Atlas Powder Co. v. E. I. duPont de Nemours*, 750 F.2d 1569, 1573, 224 USPQ 409, 411 (Fed. Cir. 1984).

## A. Claim 30 of the '518 Patent

The district court properly noted that Stora failed to proffer prior art more pertinent than that considered by the PTO and therefore had the "added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job." *American Hoist & Derrick Co. v. Sowa Sons, Inc.*, 725 F.2d 1350, 1359, 220 USPQ 763, 770 (Fed. Cir.), *cert. denied*, 105 S. Ct. 95, 224 USPQ 520 (1984). That deference merely recognizes the statutory mandate that all patents shall be presumed valid. 35 U.S.C. §282; see *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555, 225 USPQ 26, 31 (Fed. Cir. 1985).

The court appropriately gave weight to two PTO Board of Appeals (Board) decisions on the application that related to that on which the '518 patent issued. The Board there resolved issues pertinent to those presented to the district court in this case. See *In re Hollz*, 224 USPQ 714 (Bd. App. 1984) (materiality of uncut art); *In re Hollz*, Appeal No. 470-30 (Bd. App. Aug. 6, 1981) (unpublished) (obviousness). Stora fully participated since 1976 in the PTO proceedings that led to those decisions. Be-

cause both sides agreed at trial that the PTO's decisions should be accorded "great weight by the court," Stora's assertion on appeal that the district court gave undue deference to the PTO decisions comes with poor grace.

## (a) Anticipation

Stora says the district court should have found claim 30 anticipated under §102 by the disclosure in U. S. Patent No. 3,150,444, issued September 29, 1964 to Orville W. Reen (Reen patent). Relying principally on figure 2 of the Reen patent, Stora says that figure can be scaled and the carbide particles it shows can then be measured at three microns or less. Stora, however, must show that each element of the claim is found in that single prior art reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026, 224 USPQ 520 (1984). The corollary of that rule is that absence from the reference of any claimed element negates anticipation. *Atlas Powder Co.*, 750 F.2d at 1573-74, 224 USPQ at 411. The district court found no anticipation. That finding is reviewed under the clearly erroneous standard. *Id.*

[H] The district court found, as had the PTO, that nothing in the Reen patent discloses the actual size of the carbides, 594 F. Supp. at 1255, 226 USPQ at 40, and Stora has not shown that finding to have been clearly erroneous. Patent drawings are not drawn to scale, and that a defendant may when sued so measure a drawing as to match one limitation relating to size does not establish anticipation. In all events, the district court found that the Reen patent fails to disclose other elements, and Stora has not shown that finding to have been clearly erroneous.

## (b) Obviousness

Stora says the district court made erroneous findings and misapplied the law under 35 U.S.C. §103, even though the court cited *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). More specifically, Stora contends that the district court: (i) considered and discussed only the product disclosed in the '518 patent, not the product set forth in claim 30; (ii) failed to ascertain differences between the invention set forth in claim 30 and the prior art; (iii) failed to find the level of ordinary skill; and (iv) gave undue weight to the objective evidence because it bore no nexus with the claimed invention.

## (i) Process

Stora builds its first argument on one sentence in the court's opinion in which it called the invention a "method and process." On the presence of that single sentence, Stora says attributes of method claims in the '518 patent were "brought into play to save claim 30."

[2] In its focus on the phraseology in the court's opinion, Stora reflects its failure to appreciate the appellate function. This court reviews judgments, not phrases. *Fromson*, 755 F.2d at 1556, 225 USPQ at 31. To be relevant on appeal, phrases in a trial court's opinion must be shown not only to have been used in error, but must be shown to have served as the basis of the judgment appealed from. Stora makes no such showing. On the contrary, Stora simply disregards references by the district court to the claimed invention as a product. Much testimony on both sides related to whether the processes of the prior art would result in a product having the properties of the alloy body claimed, and the court was led thereby to discuss processes in its opinion. That fact does not establish, however, that the court based its judgment on the view that the invention of claim 30 was a process.

## (ii) Differences

Stora's principal prior art references are: the Reen patent; *Progress Report on Hot Forging Prealloyed Metal Powders*, 10 Precision Metal Molding 38 (Nov. 10, 1952) by Lambert H. Mott (Mott); and British Patent No. 781,083 issued August 14, 1957 to Gregory J. Comstock (Comstock).

Stora urges this court to find that the Reen patent disclosed temperatures similar to those disclosed in the '518 patent and that therefore Reen need not have included a warning against carbide growth. We are also asked, as was the district court, to reexamine the figure in Reen and measure the size of carbide particles in the figure.

The role of this court on appeal from a judgment of a district court is not that of an examiner considering a claim in an application in light of the prior art. See *Polaroid Corp. v. Eastman Kodak Co.*, No. 86-604 slip op. at 4-7, 229 USPQ 561 (Fed. Cir. Apr. 25 1986). Here, a patent has issued, a trial has been conducted on 18 dates, much testimonial and documentary evidence has been received and evaluated by a district judge. Assuming *arguendo* that Stora's and the district court's factual interpretations of the prior art were equally permissible, that

circumstance would avail it nothing on appeal, for when there are two permissible views of the evidence, the factfinder's choice between them cannot be deemed clearly erroneous. *Anderson v. City of Bessemer City, N.C.*, \_\_\_ U.S. \_\_\_, 105 S. Ct. 1504, 1512 (1985). Stora must on appeal establish not only that its view is permissible but that that of the district court is clearly in error.

As all too frequently occurs on appeal, Stora limits its discussion to evidence that tends to support its view, largely ignoring the contrary evidence accepted by the district court. Particularly ignored are the district court's credibility determinations. That approach cannot of itself establish that the district court's findings were clearly erroneous. See *American Original Corp. v. Jenkins Food Corp.*, 774 F.2d 459, 462-63, 227 USPQ 299, 300-01 (Fed. Cir. 1985). "Determining the weight and credibility of the evidence is the special province of the trier of fact." *Inwood Laboratories, Inc. v. Ives Laboratories, Inc.*, 456 U.S. 844, 856, 214 USPQ 1, 7 (1982).

At trial, Crucible's main witnesses, Mr. Neumeier and Dr. Tien, testified that the prior art produced inferior cutting tool steels. Neumeier said Comstock did not attain full density or fine carbides. He added that one practicing the subject matter of the Reen patent would be unable to achieve full density without sacrificing fine carbide size. Dr. Tien stated that Mott dealt with structural alloys from which satisfactory cutting tools could not be produced. That the district court credited that testimony is reflected in its statement:

We have considered all of the prior art references cited by [Stora] with special attention to those primary sources; i.e., Mott, Comstock and Reen I, and [have] concluded that no prior inventor was able to achieve the requisite combination of high density and finely dispersed carbides necessary to the production of top quality high speed tool steel. Indeed, no prior inventor even regarded such a combination as theoretically possible.

594 F. Supp. at 1257, 226 USPQ at 42 (footnote omitted).

The district court credited the testimony of Mr. Neumeier and Dr. Tien, and rejected that of Stora's witness, Dr. Lawley. On this record, Stora has shown no "basis on which this court could engage in the normally inappropriate process of substituting a contrary credibility determination for that of the district court." *Windsurfing International, Inc. v. AMF, Inc.*, 782 F.2d 995, 999, 228 USPQ 562, 565 (Fed. Cir. 1986); see *Railroad Dynamics*,

the invention of claim 30 theoretically possible,] would have been superfluous. 226 USPQ at 843 (emphasis in original).

The primary value in the requirement that level of skill be found lies in its tendency to focus the mind of the decisionmaker away from what would presently be obvious to that decisionmaker and toward what would, when the invention was made, have been obvious, as the statute requires, "to one of ordinary skill in the art." 35 U.S.C. §103; see *Polaroid Corp.*, *supra*, slip op. at 5.

This court has noted instances in which a particular level of skill finding did not improperly influence the ultimate conclusion under §103. One such instance involved a determination that an invention would have been obvious to one of the lowest level of skill, i.e., that of a layman. See, e.g., *Union Carbide Corp. v. American Can Corp.*, 724 F.2d 1567, 1573, 220 USPQ 584, 589 (Fed. Cir. 1984); *Chore-Time Equipment, Inc. v. Cumberland Corp.*, 713 F.2d 774, 779, 218 USPQ 673, 676 (Fed. Cir. 1983). Another involved a determination that an invention would have been nonobvious to those of extraordinary skill, i.e., other inventors in the art. See *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454, 227 USPQ 293, 297-98 (Fed. Cir. 1985); *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454, 223 USPQ 603, 614 (Fed. Cir. 1984).

[4] To establish reversible error based on a level of skill finding, it must be shown that that finding led to error in the ultimate conclusion. Stora was not in this case prejudiced by the district court's having looked to other inventors, rather than one of ordinary skill. Stora wastes the time of all concerned in arguing that the district court's treatment of the level of skill constituted reversible error.

#### (iv) Objective Evidence

As the district court noted, the parties stipulated that the properties of the product set forth in claim 30 have led to substantial commercial success for Crucible and Stora. 594 F.Supp. at 1258, 226 USPQ at 43. Incredibly, Stora attempts on appeal to denigrate that commercial success.

Stora says, without citation to the record, that there is no nexus because powder metallurgy high speed tool steels did not emerge on the market until about 1970, years after the filing date of the application that matured into the '518 patent, that substantial sales were not realized until about 1975, two years after the '518 patent issued, and that some old features contributed to commercial success.

[5] Apart from Stora's apparent and disquieting effort to renege on its stipulation, Stora is

*Inc. v. J. Stucki Co.*, 727 F.2d 1506, 1514, 220 USPQ 929, 937 (Fed. Cir.), *cert. denied*, 105 S.Ct. 220, 224 USPQ 520 (1984).

[3] Moreover, the district court met Stora's contentions head-on, rejecting, for example, its argument that Reen did not have to warn against carbide growth. The district court correctly found, as had the PTO board, that "neither Reen nor Comstock even cautioned against carbide growth at elevated temperatures." 594 F.Supp. at 1257 n.9, 226 USPQ at 42 n.9. Indeed, the Reen patent says, "generally the longer the time and higher the temperature, the higher the density of the sintered strip." Comstock, notwithstanding actual knowledge of Mott's carbide size discussion, advises the use of "as high a temperature as possible without melting." Thus, the inventor achieved the invention set forth in claim 30 by doing what those skilled in the art suggested should not be done, i.e., using lower temperatures, a fact strongly probative of nonobviousness. *W. L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 1552, 220 USPQ 303, 312 (Fed. Cir. 1983), *cert. denied*, 105 S.Ct. 172 (1984).

Lastly, the district court's determination that until the disclosure in the '518 patent became available no one could produce the combination of full density and fine carbide size found in the invention set forth in claim 30, and its determination that the limitation to carbides of less than three microns was not, in view of that fact, essential to its nonobviousness conclusion, are fully supported in the record. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 1345-46, 220 USPQ 777, 783-84 (Fed. Cir.), *cert. denied*, 105 S.Ct. 116 (1984).

In arguing that the district court failed to ascertain the differences between the invention set forth in claim 30 and the prior art, Stora has failed to carry its burden on appeal.

#### (iii) Level of Skill

Stora's contention that the district court committed legal error when it did not find a specific level of skill in the art is equally without merit. In its opinion, the court said "no prior inventor even regarded [the '518 patent] combination as theoretically possible." 594 F.Supp. at 1257, 226 USPQ at 42. In denying a stay of the injunction pending appeal, the court indicated that it had considered the skill of prior inventors, rendering it unnecessary to find some other level of skill.

In other words, it was not obvious to anyone at any level of skill in the art prior to [the '518 patent]. Any further reference, findings, or definitions of level of skill in the art, in view of [the finding that no inventor thought

Stora admits the correctness of the district court's finding that the '518 patent does not disclose hobs. That fact is itself sufficient to require affirmation of the district court's determination that the '518 patent does not anticipate claim 4 of the '934 patent.

#### (b) Obviousness

The district court distinguished *Comstock, Freher, Antitropic Dimensional Changes due to Heat Treatment of Ledgeburic Chrome Tool Steels* (Freher), and *Lement, Distortion in Tool Steels* (Lement), finding that that prior art disclosed processes and alloys all of which failed to achieve the properties produced by the process disclosed in the '934 patent. The court said that Comstock failed to "attain full, or substantially full, density and uniformly distributed fine carbide particles," and that Freher and Lement did not "even [consider] the production of tool steel through a powder metallurgy process." 594 F.Supp. at 1263, 226 USPQ at 47.

With respect to the prior art represented by the '518 patent, the district court said:

The principal benefit of the ['934] process is its elimination of the out-of-roundness traditionally characteristic in past methods of producing hobs. This, as we previously noted, is achieved through a hardening treatment phase which maximizes size change uniformity, a property particularly essential for hobs because of the reduction of out-of-roundness and resultant increased dimensional stability. While we find that [the '518 patent] is limited to cutting tools, the ['934 patent] process is [sic, would have been] not obvious.

594 F.Supp. at 1263, 226 USPQ at 47.

After evaluating all of the prior art and the objective evidence, the court concluded that the '934 "process is [sic, would have been] not only nonobvious, but appears to be [sic, have been] revolutionary in its elimination of dimensional instability in hobs." *Id.*

Stora argues that the district court focused on the process disclosed and not on the product claimed in the '934 patent. When Stora made the same argument in connection with its motion to stay the injunction, the district court responded that Stora had argued that similarities in the processes evidenced obviousness in the resulting products, and that the court employed "process" in responding to those arguments of Stora. The court also pointed to the reference in its opinion to the invention of the '934 patent as a "powder metallurgy hob, a cutting tool." 226 USPQ at 843. In addition, the court began its initial opinion with the statement that both patents "protect powder

<sup>17</sup>Though the '518 patent issued after the '934 patent, it is prior art because the application on which it issued was filed earlier. 35 U.S.C. §102(e); see *Hazeltine Research, Inc. v. Brenner*, 382 U.S. 252, 147 USPQ 429 (1965).



metallurgy cutting tool products." 594 F. Supp. at 1250, 226 USPQ at 37.

The burden of proving facts requiring a conclusion of invalidity was on Stora. Having depicted at trial a strategy and tactic involving comparison of the processes disclosed in the prior art and the '934 patent, Stora now seeks to change horses. That it cannot do. First, it could simply be unfair to re-run the race. Second, Stora has not shown that the differences found in the processes by the district court would not serve to produce corresponding differences in the claimed product.

### (2) Inequitable Conduct

The district court correctly determined that Stora had waived its inequitable conduct defense to validity at trial. 594 F. Supp. at 1264-65, 226 USPQ at 48; see also 226 USPQ at 844. Stora reserved that matter only as possible support for attorney fees in the event it prevailed before the district court. Having waived the assertion at trial, Stora may not resurrect it on appeal. *Cf. Laitram Corp. v. Cambridge Wire Cloth Co.*, 785 F.2d 292, 295, 228 USPQ 935, 937 (Fed. Cir. 1986) (allegation of fraud cannot be raised for the first time in this court). Moreover, in its supplemental opinion, the court expressly found that the Comstock patent was not material and that Stora had therefore failed to carry its burden on inequitable conduct. 226 USPQ at 847. That finding has not been shown to have been clearly erroneous.\*

### (3) Increased Damages - Willful Infringement

In its cross-appeal, Crucible argues that the facts found by the district court mandated an ultimate finding of willful infringement and that such a finding would "[compel] an award of increased damages and attorney fees." The court did not make an express finding on whether Stora's infringement was or was not willful, but limited itself to saying it was unpersuaded that "the evidence including Dr. Hellman's memorandum is sufficient to constitute a basis for treble damages."

The underlying facts are undisputed, and the sole question at this point is whether an ultimate finding of non-willful infringement would be clearly erroneous in light of those underlying facts. If we determine that a finding of non-willfulness would be clearly erroneous, and that a finding of willfulness is dictated by the undisputed underlying facts, we do not thereby engage in *de novo* fact finding, for there are only two possibilities: the infringement here was either willful or it was not. If a finding that it was not would be clearly erroneous, the only alternative is a finding that it

\* Stora's allegation that Crucible's failure to cite the Comstock reference to the PTO constituted inequitable conduct was also rejected by the PTO. See *In re Holtz*, 224 USPQ 714 (Bd. App. 1984).

### Conclusion on Nonobviousness of the Invention Set Forth in Claim 4

We have considered each of Stora's other arguments touching on the district court's validity conclusion and find them without merit.

was. In that circumstance, a remand to the district court for the purely ministerial task of entering a necessary and forfeited finding serves no useful purpose and merely wastes judicial resources.

Before the district court, Crucible relied mainly on a February 5, 1973 internal memorandum of the chief technical expert of Stora, Dr. Hellman. The memorandum was written after a meeting between Crucible and Stora officials, during which Crucible warned Stora that its products would infringe certain allowed claims, before issuance of the '518 patent, and long before Stora commenced its infringement in the United States. The memorandum read:

#### Summary:

Crucible maintains that additional patent claims, based on an old patent application, have now been approved in the USA and that these patent claims are so worded that we are infringing on them by selling ASP-steel in the USA. We have for now no possibilities for checking this, but must as a matter of course proceed [on the assumption] that it is true. A new search for prior art has been started and the material that has come to hand will be evaluated at the latest by April 15th. If enough solid prior art are found by them, we can bring an action against Crucible and begin to sell ASP-steel in the USA. If the new patent claims, on the other hand, should be judged to be valid, we will be closed out of the American market for the foreseeable future.

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In the USA and Canada, the conditions are more difficult than in other countries because of differences in the patent laws. In these other countries, we will sell ASP-steel without waiting for the results of the respective reports.

\*\*\*

"Stevens" USPat 3,561,934

All the claims refer to: (As) an article of manufacture, a metal body constructed of compacted particles of high speed tool or die steel composition. This protects, in other words, the product and he who imports such products to the USA infringes [on the patent]. We are of the opinion in the meantime, that the patent is *not tenable*. See the special memo on this.

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Crucible made it fully clear that they will sue us for patent infringement as soon as

they detect that we have begun to sell ASP-steel in the USA. Apparently they have given the same information to our potential customers in the USA. Further, they notified us that at least for the present they do not intend to sell licenses to anybody. If their product is successful, the American authorities can eventually force them to sell licenses to at least one company which is in a position to make a similar product. Their possibility is, in the meantime, unsure and lies a long way in the future. On the other hand, Crucible declared itself willing to discuss a license agreement which would only cover Sweden (!) a suggestion which was not answered.

American courts have divergent attitudes toward patents and if this question goes to court, it is important that we take the initiative so that we can choose the right court.

Up to now our efforts have naturally been concentrated on preparations to get the Stevens-patent declared invalid. The following measures are being taken now with the above mentioned new patent claims in mind:

- 1) Search for prior art in the American Patent Office (Curtis, Morris & Safford).
- 2) Search for prior art in the remaining patent literature (patent section, Falun).
- 3) Search for prior art in the technical literature (lab., Soderfors).
- 4) Evaluation of the found material. Shall be finished by April 15, 1973 at the latest.

Here, as in the other patent questions, we will work together with ASEA. In all likelihood, we will also turn to IIB (The International Patent Institute in The Hague) for certain types of research.

If the evaluation gives the right result, we will request a "declaratory judgment action"; that is, we will request that the Stevens-patent be declared invalid. The same measures will be taken against the new Holz claims as soon as they are made public. As soon as we have filed the former suit, we can begin to sell ASP-steel in the USA but until then we must lie low. This will not involve any noteworthy delay in the introduction of ASP-steel as we must first build up a stock.

During the search for oppositions, we will not come to find directly lethal material, but instead we have to concentrate on finding 2 or at most 3 documents which taken together make it "obvious to the professional" that good powder steel can be made and how. An eventual trial will come to be

...on the credibility of the experts' testimony. Our American patent lawyer has assessed at the time and cost for such an action if a compromise were not to be effected. A judgment in the district court in all likelihood take around two years at the costs will certainly be \$50,000, perhaps up to \$100,000 dollars, of which main part will be spent at the beginning of the action and when the trial itself begins. The appeal to the court of appeals, the judgment will be delayed a further 6-12 months and the costs will rise by 10 to 15 thousand dollars. We must count on having to pay our costs irrespective of the outcome. The damages that we can be assessed if we have been guessed to be 5 or possibly up to 10% of the value of the sales.

If the evaluation of the forthcoming opposition prior art should indicate that the new patent claims in the Holz application are valid, then the American market is closed to us for the foreseeable future."

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The district court found that the memorandum (1) was based on Stora's assumption that it was infringing the allowed claims, as to which assumption Dr. Hellman stated "we have no possibilities for checking . . ."; (2) urged the patents valid and infringed and rely "charted a strategy to check patent validity; contest patent validity; and, in the process, to get [Stora's] products into the United States market"; and (3) "assessed the costs and prospects of litigation upon the further assumption that 'the evaluation give the right result.'" 594 F. Supp. at 1264, 226 USPQ at 48.

The district court also refused to award treble damages because it found that Stora ignored close patent issues saying those issues presented substantial questions upon which there has been genuine debate and honest disagreement . . . 594 F. Supp. at 1264, 226 USPQ at 48. The court noted that awards of treble damages might "thwart good faith suits to contest patent validity." *Id.* (citing *Brothers, Inc. v. California-Florida Int'l Corp.*, 537 F.2d 1347, 1383, 193 USPQ 54, 296 (5th Cir. 1976), *cert. denied*, 429 U.S. 1094 (1977)). The court noted also that

"The quoted paragraphs are reproduced exactly as they appear in the translation set forth in the appendix. [Ed. Note: Printing restraints prevented the exact reproduction of these paragraphs. For their exact reproduction, see the Court's slip opinion.]

when Crucible told Stora of the patents, Stora replied that the patents were invalid in view of Comstock and a 1964 Holz article. Concluding that Crucible had not overcome Stora's claims of good faith, the district court mistakenly referred to \$284 instead of \$285 in its refusal to find this to be such an "exceptional case, under 35 U.S.C. §284 (1982) [sic], to justify the award of treble damages." 594 F. Supp. at 1264, 226 USPQ at 48.

[6] That the district court declined to impose increased damages that may accompany a finding of willful infringement does not mean that the court found the infringement not willful. See, e.g., *S. C. Johnson & Son, Inc. v. Carter Wallace, Inc.*, 781 F.2d 198, 201, 228 USPQ 367, 369 (Fed. Cir. 1986). Though the parties have proceeded on appeal as though the district court had found Stora's infringement not willful, all the district court decided was that it would not award treble damages. It appears that the court felt that if it found Stora's infringement willful it would have been required to award treble damages. If that be so, it may be said that the court implicitly found Stora's infringement not willful. If that implicit finding was made, it was clearly erroneous.

The district court did not have before it, of course, the guidance on the law of willful patent infringement provided by this court since the time of the trial. In *Underwater Devices*, this court stated:

Where, as here, a potential infringer has actual notice of another's patent rights, he has an affirmative duty to exercise due care to determine whether or not he is infringing. Such an affirmative duty includes, *inter alia*, the duty to seek and obtain competent legal advice from counsel before the initiation of any possible infringing activity. [Citations omitted.]

*Id.* at 1389-90, 219 USPQ at 576 (emphasis in original).<sup>10</sup>

Though it is an important consideration, not every failure to seek an opinion of competent counsel will mandate an ultimate finding of willfulness. *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 867, 226 USPQ 402, 412 (Fed. Cir. 1985), *cert. denied*, 106 S. Ct. 1197 (1986) (court "should always look at the totality of the circumstances"). Conversely, that an opinion of counsel was obtained does not alone and alone dictate a finding that the infringement was not willful. See, e.g., *Kort Corp. v. Wilco Marsh Buggies & Draglines Inc.*, 761 F.2d 649, 656, 225 USPQ 985, 989

<sup>10</sup> The determination referred to includes, of course, one on validity, there being no liability for infringement of invalid claims.

(Fed. Cir.), *cert. denied*, 106 S. Ct. 230 (1985); *Central Soya Co. v. George A. Hormel & Co.*, 723 F.2d 1573, 1576-77, 220 USPQ 490, 492-93 (Fed. Cir. 1983). In the present case, the totality of the circumstances, including the failure to seek advice of counsel, makes any finding of non-willfulness clearly erroneous and compels the only alternative finding, i.e., that Stora's infringement was willful.

On the undisputed facts of record, an ultimate finding that Stora's infringement was not willful would be "incompatible with the applicable findings [the court] clearly articulated" and would thus, as above indicated, be clearly erroneous. *CPG Products Corp. v. Pegasus Luggage, Inc.*, 776 F.2d 1007, 1015, 227 USPQ 497, 502 (Fed. Cir. 1985). Stora has not shown to have been clearly erroneous the underlying findings (e.g., that Stora proceeded with its infringement on the assumption, as stated in the memorandum and found by the district court, that the patents were valid and would be infringed). Those findings fully support the present determination that an ultimate finding of non-willfulness would be clearly erroneous.

Stora has not even asserted that it sought advice of counsel when notified of the allowed claims and Crucible's warning, or at any time before it began this litigation. Stora's silence on the subject, in alleged reliance on the attorney-client privilege, would warrant the conclusion that it either obtained no advice of counsel or did so and was advised that its importation and sale of the accused products would be an infringement of valid U.S. patents.

The internal memorandum of Dr. Hellman, a non-lawyer, clearly shows that Stora intentionally undertook the risk of importing infringing products in the hope that a court would hold the patent invalid, or that Crucible would grant a license to escape litigation. The '518 patent issued almost a full year before Stora began its infringement in the United States. The district court's characterization of the memorandum as "merely [evidencing] an aggressive strategy of contesting patents" may relate to a reason for infringing; it cannot serve as a basis for finding Stora's infringement not willful. That Stora's officials told Crucible, as part of that "strategy", that they thought the patents invalid in view of certain prior art cannot substitute for the advice of competent counsel before the onset of infringement and is contrary to Stora's own internal memorandum."

<sup>11</sup> We do not here evaluate Stora's strategy. An aggressive strategy may or may not be a factor in a decision to deny or award increased damages. An "aggressive strategy" unsupported by any competent

If infringement be accidental or innocent, increased damages are not awardable for the infringement. If infringement be willful, increased damages "may" be awarded at the discretion of the district court, and the amount of increase may be set in the exercise of that same discretion.

Our indication that Stora's infringement must on this record be found willful does not, therefore, mandate an award of increased damages. The district court has not determined whether, if Stora's infringement were found willful, it would deem increased damages appropriate. Nor has it determined what level of increase, if any, would be appropriate. We therefore express no view on whether the district court, in the exercise of its discretion, should or should not award increased damages as a part of its determination of the damage issues it reserved for later trial. See *CPG Products Corp.*, 776 F.2d at 1015, 227 USPQ at 502.

#### (4) Attorney Fees

Having determined that this case was not "exceptional", the district court declined to award treble damages and did not mention either \$285 or attorney fees *per se*. Willfulness of infringement relates to the accused infringer's conduct in the marketplace. Because that conduct may be seen as producing an unnecessary and outcome-certain law suit, it may make the case so exceptional as to warrant attorney fees under §285. Similarly, bad-faith displayed in pretrial and trial stages, by counsel or party, may render the case exceptional under §285.

When a court declines to award attorney fees on the basis of a determination that a case is not exceptional, the fact findings underlying that determination are reviewed under the clearly erroneous standard. When the determination is that a case is exceptional, the election to grant or deny attorney fees is reviewed under the abuse of discretion standard. *Reactive Metals and Alloys Corp. v. ESM, Inc.*, 769 F.2d 1578, 1582-83, 226 USPQ 821, 824 (Fed. Cir. 1985).

We join the district court's concern that awards of increased damages and attorney fees

advice of counsel, thorough investigation of validity and infringement, discovery of more pertinent unit- and prior art, or similar factors, is the type of activity the reference in the patent law to increased damages seeks to prevent. An alleged infringer who intentionally blinds himself to the facts and law, continues to infringe, and employs the judicial process with no solidly-based expectation of success, can hardly be surprised when his infringement is found to have been willful.

not be allowed to thwart efforts to challenge the validity of patents believed in good faith to be invalid. A party who has obtained advice of competent counsel, or otherwise acquired a basis for a *bona fide* belief that a patent is invalid, can be said to serve the patent system in challenging that patent in a law suit conducted fairly, honestly, and in good faith. Such a party should not have increased damages or attorney fees imposed solely because a court subsequently holds that belief unfounded, particularly when the issues may be fairly described as "close."

As above indicated, a court may find that in all the circumstances an infringement was so willful as to justify a determination that a case is exceptional, and a court may thereupon exercise its discretion to award attorney fees to the patentee. See *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 455, 227 USPQ 293, 298 (Fed. Cir. 1985); *Mitigo Electronics Corp. v. United Business Communications, Inc.*, 623 F.2d 645, 667, 206 USPQ 481, 498 (10th Cir.), cert. denied, 449 U.S. 1066, 208 USPQ 376 (1980). Because there is here no express finding on whether Stora's infringement was so willful as to render the case exceptional, we leave the question in the present case to the district court's determination and discretion in conjunction with the reserved damage trial.

Respecting other possible bases for awarding attorney fees, the district court, in discussing the damages, found that Stora's claims of good faith were not overcome by the evidence, and that the patent validity issue presented substantial questions on which there had been honest disagreement in the PTO and at trial. Those findings would be applicable in considering a request for attorney fees under §285. Because the district court did not expressly award or refuse attorney fees under these findings, there is no basis for this court's review of the findings. There having been no denial of attorney fees *per se* under §285, we leave that question also to such further proceedings as the district court may deem appropriate.

#### (4) The Injunction<sup>12</sup>

It is undisputed that Kloster was created immediately after conclusion of the trial and

<sup>12</sup> The injunction reads:

Each of the defendants, their officers, agents, servants, employees, successors in interest and assigns, and any other person, corporation, or organization acting in concert with them is hereby permanently enjoined and restrained during the life of the respective U.S. patents identified above from the making, using or selling of products infringing claim 30 of U.S. Patent No. 3,746,518 or claim 4 of U.S. Patent No. 3,561,934, and from

asserted it was not bound, when it contested joinder, declined intervention, and sought specific exclusion. It effectively asserted that it was bound, when it sought modification of the injunction, because absent such assertion Kloster would lack standing to contest the injunction's terms. In all events, the district court correctly intended that Kloster be bound by the injunction.

At the status conference, the court said, "the most significant feature of Rule 25(c) is that it does not require that anything be done after an interest has been transferred. The action may be continued by or against the original party and the judgment will be binding on his successor in interest, even though he is not named." (Quoting 7A C. Wright & A. Miller, *Federal Practice and Procedure*, §1958, at 664 (1972); see also, *Minnesota Mining & Manufacturing Co. v. Eco Chem Inc.*, 757 F.2d 1256, 1263-64, 225 USPQ 350, 354-55 (Fed. Cir. 1985) (joinder merely a determination that transferee's presence would facilitate conducting the litigation)).

On appeal, Kloster says that the district court "sought to evade the limitations" of Fed. R. Civ. P. 65(d)<sup>13</sup> when it inserted "successors in interest and assigns." Kloster quotes from *Regal Knitwear Co.*, 324 U.S. at 14: "The terms 'successors and assigns' in an enforcement order of course may not enlarge its scope beyond that defined by the Federal Rules of Civil Procedure." Kloster disregards and distorts the thrust of *Regal Knitwear Co.*, in which the Supreme Court affirmed a *denial* of a motion to strike "successors and assigns" and said that "successors and assigns" may not be impermissible under Rule 65(d) and may be effective to bind those in privity with the defendant. In *Regal Knitwear Co.*, the Court did not have a successor or assignee before it. In *Golden State Bottling Co. v. National Labor Relations Board*, 414 U.S. 168, 177-80 (1973), it affirmatively held that the successor party there before it was subject to the enforcement order involved, and went on to clarify the absence of conflict between Rule 65(d) and orders binding successors and assigns.

In *Regal Knitwear Co.*, following the sentence quoted by Kloster, the Court wrote:

<sup>13</sup> Thus it was not necessary that the court rule on Crucible's motion to join Kloster.

<sup>14</sup> Rule 65(d) provides:

Every order granting an injunction . . . is binding only upon the parties to the action, their officers, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them who receive actual notice of the order by personal service or otherwise.

Successors and assigns may, however, be instrumentalities through which defendant seeks to evade an order or may come within the prescription of persons in active concert or participation with them in violation of an injunction. If they are, by that fact they are brought within the scope of contempt proceedings by the rules of civil procedure."

324 U.S. at 14. The Court stressed that the emphasis "is not merely to succession, but to a relation between the defendant and the successor which might of itself establish liability within the terms of Rule 65." 324 U.S. at 15. The relation here is not disputable. Kloster is the successor-operator of Stora assets used to produce infringing products.

Kloster argues, however, that the district court "avoided giving any consideration to the relationship" between Kloster and Stora, did not "find" it in privity with Stora, did not give it a chance to show it was not in privity, and cannot bind it with Stora solely because it purchased Stora's infringing facility, citing an agreement between Kloster and Stora that Kloster accepted no liability for Stora's infringement. Kloster argues that it cannot be bound because it was not a party, disregarding its resistance to Crucible's motion to join it. Private agreements between Kloster and Stora are irrelevant. Kloster also argues that it should be entitled to litigate the case on the merits before being enjoined. The arguments are spurious.

Courts have repeatedly found privity where, after a suit begins, a nonparty acquires assets of a defendant-infringer. See, e.g., *Brunswick Corp. v. Chrysler Corp.*, 408 F.2d 335, 338, 161 USPQ 65, 67 (7th Cir. 1969); *J. R. Clark Co. v. Jones & Laughlin Steel Corp.*, 288 F.2d 279, 280, 129 USPQ 97, 98-99 (7th Cir.), cert. denied, 368 U.S. 828 (1961); *Alb. Inc. v. Norma Lites, Inc.*, 231 F.2d 662, 663, 109 USPQ 26, 27 (2d Cir. 1956). The applicable reasoning was well illustrated in *J. R. Clark Co.*:

If a third party may thus come into the acquisition of rights involved in pending litigation without being bound by the final judgment, and require a suit *de novo* in order to bind him, he might, pending that suit, alienate that right to another with the same result, and a final decree bearing fruit could never be reached.

<sup>15</sup> Quoting part of a statement out of context, while ignoring a portion that totally undermines the proposition for which the quote was offered, reflects a reprehensible and unprofessional dereliction of the duty of candor owed the court. See Model Rules of Professional Conduct Rule 3.3 (1983); accord Model Code of Professional Responsibility DR 7-102(A)(2), DR 7-106(B)(1) (1981).



288 F.2d at 280, 129 USPQ at 98 (quoting *G. & C. Merriam Co. v. Saalfeld*, 190 F.2d 927, 932 (6th Cir. 1911)).

Nowhere does Kloster appear to recognize that it can avoid the injunction by simply refraining from infringement. That it desires to continue Stora's infringement appears the only possible basis for its strenuous effort to evade the injunction.

The district court's denial of Kloster's motion to modify the injunction is affirmed.

### CONCLUSION

The judgment refusing to hold invalid claim 30 of the '518 patent and claim 4 of the '934 patent, and refusing the inequitable conduct defense, is affirmed. To the extent that the district court's refusal of treble damages rested on an implicit finding that Stora had not willfully infringed, that finding was clearly erroneous, and the request for increased damages and attorney fees is remanded. The denial of Kloster's motion to modify the injunction is affirmed.

*AFFIRMED IN PART AND REMAND-ED IN PART.*

### Court of Appeals, Seventh Circuit

In Re Innovative Construction Systems, Inc.

No. 85-1142

Decided June 17, 1986

### UNFAIR COMPETITION

#### 1. Pleading and practice in courts — Judgments (§53.53)

##### Trade secrets — In general (§68.901)

Evidence, in misappropriation of trade secrets action, from which jury could infer that plaintiff took reasonable precautions to limit knowledge among its employees of formulas for its simulated brick paneling, that such formulas were disclosed to former employee in confidence and under pledge of secrecy, and that competitor would have difficulty replicating formulas without resorting to improper means, supports reversal of judgment notwithstanding verdict.

#### 2. Accounting — Damages — Trademarks and unfair competition (§11.258)

Jury's award of \$225,000 for misappropriation of trade secrets is affirmed.

was warranted by the evidence. The district court granted the defendants judgment notwithstanding the verdict, and in the alternative, a new trial on compensatory damages, and denied the award of punitive damages in its entirety. For the reasons stated below, we will reverse the judgment notwithstanding the verdict, and affirm the orders granting a new trial on compensatory damages and denying punitive damages.

### I

Innovative Construction Systems, Inc. ("Innovative") is a Wisconsin corporation with its principal place of business in that state. Defendants Bowen Supply, Inc. ("Bowen Supply") and Sunbelt Brick Company, Inc. ("Sunbelt") are Georgia corporations with their principal places of business in Americus, Georgia. Defendant Harrold Bowen is president and chairman of the board of Bowen Supply and a director of Sunbelt. Both he and defendant Phillip Strand were at all times relevant to this appeal citizens of Georgia. (Hereinafter, unless otherwise indicated, the term "Bowen Supply" also refers to Sunbelt, Harrold Bowen, and Phillip Strand.)

In 1967, John Riley, an attorney, and Dorlen Hammon, a dentist, along with several others, formed Masonry Siding, Inc., to manufacture simulated brick panels for the homebuilding industry. Their product proved unmarketable, and Masonry Siding ultimately declared bankruptcy. In 1973, Riley and Hammon formed Innovative. Over the next several years they spent considerable time developing a new process for simulating brick paneling. The method they eventually developed required the application of three layers, composed of slag aggregate, cement, bonding agent, and slurry, to a four-by-eight-foot backing board. The resulting product was called "Panl Brick." The commercial value of the process consisted of the formulas that set forth the precise mixture of raw materials needed for each layer. These formulas were somewhat flexible in that the proportion of aggregate to water could be modified slightly to account for changes in temperature and humidity.

Hampered by insufficient operating capital, Innovative initially limited its marketing efforts to local home-improvement centers and to some outlets for national retailers. On November 15, 1977, Innovative entered into a distribution agreement with defendant Bowen Supply. The agreement gave Bowen Supply the exclusive right to sell Panl Brick to the manu-

factured housing market. Bowen Supply became, and remained, the only nationwide distributor of Panl Brick, and from late 1978 through 1981, sold virtually all the Panl Brick that Innovative could manufacture.

Bowen Supply was at one time interested in acquiring Innovative. On June 18, 1979, the parties met to discuss the matter. The course of their negotiations is disputed. According to Riley's testimony, Bowen Supply offered to purchase Innovative for royalties based on annual sales over a period of three to five years, the total amount of which was estimated to be \$400,000.00. Bowen Supply claims that no offer based on royalties had been made. Duncan Knapp, executive vice-president for sales and marketing at Bowen Supply from 1973 to 1980, stated, however, that Bowen Supply did in fact make an offer based on royalties, and that it was disappointed when Innovative did not accept the offer.

In late September of 1979, Innovative employed defendant Strand, who eventually became plant manager. In the course of his duties, Strand was often in communication with Bowen Supply. In October of 1980, Bowen Supply told Strand that it was impressed with his abilities and would be interested in offering him a position should he leave Innovative. In mid-February of 1981, Strand went to Georgia to talk with Stewart Howell, a marketing officer for Bowen Supply at the time, and spent several hours discussing employment opportunities at Bowen Supply. Both Strand and Howell testified that they did not then discuss the possibility of Strand establishing a manufacturing facility to produce simulated brick for Bowen Supply in Georgia. Howell stated further that Bowen Supply at that time had also not entered into an agreement to employ Strand.

On the 15th or 20th of March 1981, Strand gave Innovative notice that he was leaving their employ. On March 31, Strand informed Howell that he would no longer be working for Innovative. Howell reiterated Bowen Supply's interest in setting up a manufacturing plant in Georgia under Strand's supervision or, if that proved unfeasible, of placing Strand in some other position. Strand indicated that he too was interested in organizing a facility for Bowen Supply. According to Howell's testimony, he had virtually given Strand a verbal guarantee of employment before Strand left for Georgia.

Strand's last day of employment with Innovative was April 2, 1981. He knew then that he would soon assume a position with Bowen Supply, and that, if he were to establish a

case that this Court has personal jurisdiction over the defendants.

The next issue the Court must confront under the Fifth Circuit's test in *Asarco* is whether the exercise of personal jurisdiction in this case comports with notions of fair play and substantial justice. *Stuart v. Spademan*, 772 F.2d 1185, 1191 (5th Cir. 1985) (quoting *International Shoe Co. v. Washington*, 326 U.S. 310, 316 (1945)). The Court must consider the burden on the defendant[s], the interest of the forum state, the plaintiff's interest in obtaining relief, and the shared interest of the several states. *Stuart*, 772 F.2d at 1191; *Asahi*, 480 U.S. at 113. The burden is on the defendants to present a compelling case that jurisdiction would be unreasonable. *Burger King Corp. v. Rudzewicz*, 471 U.S. 462, 477 (1985).

The defendants contend that it would be severely burdensome for either OKI America or OKIDATA to be forced to defend a suit in this District. Neither OKI America nor OKIDATA is licensed or registered to do business in Louisiana and neither has any agent for service of process in the state. In addition, neither defendant has any facilities or employees in Louisiana. None of their relevant witnesses or documents is here. They do not manufacture products here.

Defendants further argue that Louisiana has no interest in this suit because it arises under federal patent law. Plaintiff, on the other hand, contends that Louisiana has an interest in seeing that its resident, the Laitram Corp., obtains relief for its injuries. Indeed, the Fifth Circuit has found that a state has a significant interest in redressing injuries that occur within its borders at the hands of nonresidents. *WNS, Inc.*, 884 F.2d at 204.

Plaintiff argues that it would serve justice to try this case in Louisiana because plaintiff is a corporation with its headquarters and principal place of business in the Eastern District of Louisiana. The inventor of the patented plaintiff claims has been in Louisiana since James M. Lapeyre, now deceased, but a former resident of Louisiana. Furthermore, plaintiff feels the effects of infringement of its patent in Louisiana, whether the infringement takes place in Louisiana or elsewhere. Plaintiff contends that many of its fact witnesses and many of its documents are located in Louisiana. Plaintiff argues that it has a strong interest in obtaining convenient and effective relief in Louisiana.

Having considered the questionable burden on the defendants, and the significant interests of Louisiana and the plaintiff, this Court finds that the exercise of jurisdiction

likely be the source of witnesses and documents, OKI America has an authorized distributor in California, and it has a California facility responsible for distribution of 30% of the supposedly infringing printers.

Finally, OKI America argues that the interests of justice would be served by transferring this case to California because then both cases would be tried in the same forum, which would ensure consistent judgments and would eliminate duplicate efforts by the parties and the two courts.

[2] This Court finds that this forum is more convenient than the Eastern District of California. The plaintiff is a resident of this forum; the defendants, located principally in New Jersey, can defend themselves as easily in Louisiana as in California.

Accordingly, IT IS ORDERED that the motion of defendants, OKI America, Inc. and OKIDATA, to dismiss plaintiff's complaint pursuant to Fed. R. Civ. P. 12(b)(2) and 12(b)(3) be and is hereby DENIED.

IT IS FURTHER ORDERED that the motion of OKI America, Inc. and OKIDATA, to transfer this action to the Eastern District of California pursuant to 28 U.S.C. § 1404(a) be and is hereby DENIED.

IT IS FURTHER ORDERED that defendant Comp USA's motion to stay the proceedings against it, in the event the case is severed and transferred, be and is hereby DENIED AS MOOT.

**Court of Appeals, Federal Circuit**

In re Rijckaert

No. 93-1206

Decided November 23, 1993

**PATENTS**

**1. Patentability/Validity — Obviousness — Relevant prior art — Particular inventions (§115.0903.03)**

Board of Patent Appeals and Interferences erred by affirming rejection, on grounds of obviousness, of claims for apparatus to record and reproduce electric signal on magnetic record carrier, since references relied upon to reject claims do not provide basis for prima facie determination of obviousness, in that prior art relied upon, either individually or when combined, does not disclose, suggest, or render obvious claimed invention, and since applicant's burden to rebut rejection of obviousness does not arise until prima facie case has been established.

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Application for patent, serial no. 07/345,396, filed by Albert M.A. Rijckaert and Joannes A.E. Van Der Kop. From decision affirming final rejection of claims, applicants appeal. Reversed.

Edward W. Goodman (Algy Tamoshunas, with him on brief), Tarrytown, N.Y., for appellant.

Lee E. Barrett, associate solicitor, PTO (Fred E. McKelvey, solicitor, with him on brief), for appellee.

Before Lay, senior circuit judge (Eighth Circuit, sitting by designation), and Mayer and Lourie, circuit judges.

Lourie, J.

Albert Rijckaert and Joannes van der Kop ("Rijckaert") appeal from the decision of the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences affirming the final rejection of claims 5-12, all of the pending claims in patent application serial no. 07/345,396, as being unpatentable under 35 U.S.C. § 103 (1988). Because the references relied upon to reject the claims do not provide the basis for a *prima facie* determination that the claimed invention would have been obvious, we reverse.

The patent application at issue relates to an apparatus for recording and reproducing an electric signal on a magnetic record carrier. Independent claim 11 is drawn to a recording apparatus and it specifies a relationship between time expansion or compression and three variables  $\alpha$ ,  $n$ , and  $M$ . Claim 11 reads, in pertinent part:

11. An apparatus for recording an electric signal on a magnetic record carrier in tracks which are inclined relative to the longitudinal direction of said record carrier, comprising:

.... [a] time-base correction circuit providing a time expansion or time compression of the signal blocks by a factor of  $\alpha^n/(180*(M+1))$ , where  $\alpha$  is the wrap

around the circumference of the record carrier,  $n$  is the number of tracks per revolution, and  $M$  is the number of signal blocks per track.

.... [b] a time-base correction circuit providing a time expansion or time compression of the signal blocks by a factor of  $\alpha^n/(180*(M+1))$ , where  $\alpha$  is the wrap

ping angle of the record carrier around the head drum and differs from 180°, n is the number of head pairs, and M is the number of times within a specific time interval that a head pair which comes in contact with the record carrier during said time interval does not record a signal on the record carrier, said time interval being defined by those instants at which two consecutive track pairs are recorded by one or two head pairs.

Independent claim 12 is drawn to an apparatus for reproducing a recorded signal and it recites the reciprocal relationship between time compression or expansion and the three variables  $\alpha$ , n, and M. Dependent claims 5-10 further limit claims 11 or 12.

The Board upheld the final rejection of claims 5 and 7-12 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 4,757,392 to Awamoto in view of Driessen et al., *An Experimental Digital Video Recording System*, CE-32 I.E.E.E. Transactions on Consumer Electronics 3, Aug. 1986, at 362-70. The Board also upheld the final rejection of claim 6 as being unpatentable over Awamoto and Driessen in view of U.S. Patent 4,542,417 to Ohta.

#### DISCUSSION

We review *de novo* the Board's ultimate determination of obviousness. *In re De Blauwe*, 736 F.2d 699, 703, 222 USPQ 191, 195 (Fed. Cir. 1984). Underlying factual inquiries, such as the scope and content of the prior art, differences between the prior art and the claimed invention, and level of ordinary skill in the art are reviewed for clear error. See *In re Caveney*, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985).

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. *Id.* "A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 782, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)). If the examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

bles to time expansion/compression.<sup>2</sup> Driessen, the secondary reference, is relied upon only to teach the provision of a pair of write beads having a mechanically rigid coupling to each other and does not remedy the deficiencies of Awamoto. Thus, the prior art relied upon does not disclose, suggest, or render obvious the claimed invention, either individually or when combined.<sup>3</sup>

Awamoto does not describe the use of time expansion and compression as a means of optimally filling tracks, much less suggest that the three variables of the claims are even a factor in determining the amount of time expansion or time compression. Rather, Awamoto is concerned primarily with providing a high-quality broadcast television signal for use in conventional video machinery, and with compensating for errors introduced to such a signal by a transfer circuit. The Commissioner's assertion "that the [analysis] discussed in his brief] and Awamoto demonstrate that the relationship was, in fact, well known in the art" is unavailing. While the court appreciates the Commissioner's thorough explanation of the claimed relationship in his brief, the Commissioner's brief is not prior art. The prior art is Awamoto, and it does not indicate that the relationship is well known in the art nor does it suggest the claimed relationship. See *In re Yates*, 663 F.2d 1054, 211 USPQ 1149, 1151 (CCPA 1981) (when the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference).

To support the Board's affirmation of the rejection, the Commissioner points out that

"The Commissioner admits that other limitations recited in claims 11 and 12 are not found in Awamoto; however, those limitations were not argued before the Board or this court. Thus, we agree with the Commissioner that those limitations are not at issue here."

The Board also noted that the claims are not "specific" in that they claim the three variables as a "factor" of the expansion or compression time. The Board stated, "claims 11 and 12 fail to say which of expansion time or compression time is factored by the variables, how or when one of the two times is selected based on the variables or how each of the two times is related to the variables." The Board further stated, "the relationship is probably satisfied by any prior art video tape recording and reproducing apparatus that otherwise satisfies the remaining requirements of the claims at bar." While the Board's position implies a possible rejection based upon 35 U.S.C. § 112, this issue is not before us. In any event, the statement that the relationship is "probably satisfied" by the prior art is speculative and therefore does not establish a *prima facie* case of unpatentability.

<sup>1</sup> The claims stand or fall together since no separate argument for patentability has been made for each claim.

in the recording art, the exact matching of signal time to recording time is an optimal condition, and that this condition would be met by fulfilling the claimed relationship. While the condition described may be an optimal one, it is not "inherent" in Awamoto. Nor are the means to achieve this optimal condition disclosed by Awamoto, explicitly or implicitly. "The mere fact that a certain thing may result from a given set of circumstances is not sufficient [to establish inherency]." *In re Oelrich*, 666 F.2d 578# 581-82, 212 USPQ 323, 326 (CCPA 1981) (citations omitted) (emphasis added). "That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown." *In re Spormann*, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Such a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection. See *In re Newell*, 891 F.2d 899, 901, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989).

Rijckaert also argues that the rejection of dependent claim 6 as being obvious over Awamoto and Driessen in view of Ohta is improper. Ohta discloses an apparatus for compensating for signal loss in a single-head video recorder using a time compression factor of 3/5 (a signal of time period 5t/4 is compressed into a track of time period 3t/4) so that a signal is recorded completely during the time period that it takes the recording head to scan the magnetic tape. Regarding the Ohta patent, the examiner stated, "Ohta was only relied upon to support the idea that other compression factors are used in the prior art. . . . The relationship between the time expansion/compression and the three variables recited in the claims from which claim 6 depends, which is absent in the combination of Awamoto and Driessen, is not supplied by Ohta. Thus, we agree that the rejection of claim 6 under § 103 is improper for the reasons set forth above with respect to the other claims."

While the Commissioner criticizes Rijckaert's arguments regarding the § 103 rejections, the burden to rebut a rejection of obviousness does not arise until a *prima facie* case has been established. In the case before us, it was not.

#### CONCLUSION

The decision of the United States Patent and Trademark Office Board of Patent Ap-

\* The Board did not specifically address the rejection of claim 6; therefore, claim 6 was considered to be affirmed for the reasons stated by the examiner. See 37 C.F.R. § 1.196(a) (1993).

copyrighted by an Illinois resident, was sent from Illinois, and contained a Notice of Copyright, apprising West of the attendant restrictions and obligations which accompanied the item and put West on notice that copyright infringement could subject it to suit in Illinois. Despite this, West allegedly infringed the copyright in Arizona. West's intentional purchase, on two separate occasions, of a product in Illinois, combined with the fact that the complaint stems directly from that purchase, suffices to create the minimum contacts required for due process.<sup>3</sup> See *Empress International Ltd. v. Riverside Seafoods, Inc.*, 112 Ill. App. 3d 149, 154-55, 445 N.E.2d 371, 67 Ill. Dec. 891 (First Dist. 1983) (court held that defendant's placement of two orders with an Illinois supplier was sufficient to create the minimum contacts required for jurisdiction), citing *Cook Associates, Inc. v. Colonial Broach & Machine Co.*, 14 Ill. App. 3d 965, 304 N.E.2d 27, — Ill. Dec. — (First Dist. 1973). We thus deny West's motion to dismiss for lack of personal jurisdiction.

**B. Motion to Transfer**

28 U.S.C. § 1404(a) governs change of venue and provides that [f]or the convenience of the parties and witnesses, in the interest of justice, a district court may transfer any civil action to any other district or division where it might have been brought.

In order to satisfy § 1404(a), a movant must establish that venue is proper in both the transferor and transferee forums, and that the transfer serves the convenience of the parties and witnesses and is in the interest of justice. *Hotel Constructors, Inc. v. Seagrave Corp.*, 543 F. Supp. 1048, 1050 (N.D. Ill. 1982). Since we have jurisdiction in this case, and the parties do not contest the propriety of jurisdiction in Arizona, the sole remaining issue is whether transfer to Arizona enhances the convenience of those concerned and promotes justice.

**(i) Convenience of the Parties**

West strenuously argues that adjudication of this matter in Illinois will financially dev-

<sup>3</sup> Because Illinois courts generally look to the federal due process clause for guidance when interpreting the due process clause of the Illinois Constitution, we find that the requirements of the Illinois Constitution are similarly met. See *Rollins*, 152 Ill. Dec. at 198. *Mors* 791 F.Supp at

Plaintiff Susan Rae Rasmussen ("Rasmussen") brings this copyright infringement action against defendant The West, Inc. ("West"). Presently before us is West's motion to dismiss this action for lack of personal jurisdiction and its motion, in the alternative, to transfer this action to Arizona. For the following reasons, we deny both of defendant's motions.

**I. Factual Background<sup>1</sup>**

Plaintiff Rasmussen, an Illinois resident, is the sole proprietor of Sular Designs, and earns her income, in part, by designing, publishing, and selling needlepoint patterns. In March, 1990, Rasmussen received a copy-right for her "Fleur Du Quad" needlepoint design, chart, and instructions.

West is a non-profit Arizona corporation. With two paid employees and a group of volunteers, West runs a needlepoint and embroidery shop, selling supplies and giving lessons to its customers. All of West's profits are donated to needy women and children. The corporation does not maintain an office in Illinois, nor does it have any employees, officers, directors, or other representatives in Illinois. West does not advertise or solicit business in this state, does not own or rent any property here, or list a local phone number. In short, West conducts all of its business within Arizona.

In September, 1991, West mail-ordered. *inter alia*, several copies of the Fleur Du Quad pattern from Rasmussen. One year later in September, 1992, West again mail-ordered the copyrighted pattern from Rasmussen. Both times, Rasmussen received the orders and payment in Illinois and sent the patterns to West in Arizona. Both times, the patterns contained a Notice of Copyright.

Rasmussen alleges that one of West's agents photocopied the Fleur Du Quad design and instructions and sold at least two of the photocopies in violation of the copyright. Peggy Wolfe ("Wolfe"), a resident of Green Bay, Wisconsin, purportedly witnessed a West representative selling copies of the Fleur Du Quad design in a park in Tucson. At the time, Wolfe was with a group of five other needlepointers working together on patterns in the park.

**II. Discussion**

**A. Motion to Dismiss**

West seeks to dismiss this suit, arguing that its contacts with Illinois are too insub-

<sup>1</sup> For the purposes of this motion, we will take the complaint's well-pleaded allegations as true.

peals and Interferences affirming the final rejection is reversed.  
**REVERSED**

**District Court, N.D. Illinois**

**Rasmussen v. The West Inc.**

No. 92 C 8495

Decided June 29, 1993

**JUDICIAL PRACTICE AND PROCEDURE**

**I. Jurisdiction — Personal jurisdiction (§405.11)**

Federal district court in Illinois has personal jurisdiction, in copyright infringement action, over Arizona corporation that does no business in Illinois, since defendant purposefully and knowingly initiated two purchases of allegedly infringed needlepoint design from Illinois resident, since design was created and copyrighted by that resident, sent from Illinois, and included copyright notice which warned defendant that infringement could subject it to suit in Illinois, since complaint stems directly from defendant's purchases, and since defendant therefore had minimum contacts with state sufficient to satisfy requirements for due process.

**2. Jurisdiction — Venue; transfer of action — In general (§405.1901)**

Transfer of copyright infringement action from Illinois to Arizona is not warranted, since there is no evidence that defendant will incur greater hardship litigating in Illinois than plaintiff would suffer pursuing claim in Arizona, since Illinois is more convenient forum for two of three presently-known witnesses, and since interests of justice do not favor either forum, in that there is no related litigation pending in Arizona nor any complex state law issue to be decided.

Action by Susan Rae Rasmussen against The West Inc., for copyright infringement. On defendant's motions to dismiss for lack of personal jurisdiction, or to transfer action to Arizona. Both motions denied.

David C. Brezina and Dennis M. McWilliams, of Lee, Mann, Smith, McWilliams, Sweeney & Ohlson, Chicago, Ill., for plaintiff.

Eric L. Samore, of Querrey & Harrow, Chicago, for defendant.

As is to be expected with an obviousness rejection, neither reference discloses a specific embodiment employing all the features of the claimed method. All of the embodiments specifically disclosed in Athy, described by the solicitor in oral argument as the most pertinent reference, utilize a transmitter along with two receiver-to-receiver measuring interval. The examiner and board rely on the suggestion in our first quotation from Athy that "it may in some cases be desirable to employ a greater number of receivers [receivers] than two" as teaching the use of three receivers. As to the requirement for the long and short receiver spacing, they rely on the excerpt from Athy quoted hereinabove which discusses the effect of different spacing of the transmitter-to-receiver and receiver-to-receiver intervals in the one transmitter and two receiver system specifically disclosed. On this latter point, reliance is also placed on Wyckoff's disclosure that spacing between the detectors and the source is varied depending upon the terrain and the desired degree of resolving power, with "2 to 50 feet" separation being used in practice.

Some difficulty arises from the failure of the examiner and board to point out why they think the disclosure relied on would make it obvious to modify specific disclosures in the prior art of one transmitter-two receiver processes to provide appellants' process using three receivers which provide two receiver-to-receiver measuring intervals and are relatively spaced in a manner different from that of the specific prior art disclosures. Although the solicitor undertakes to overcome some of that deficiency, we are not satisfied that the record demonstrates that the required modification, or selection of features, would have been obvious to a person of ordinary skill in the art.

In the first place, the mere suggestion in Athy that it may in some cases be desirable to employ more than two detectors does not disclose the position of any additional receivers. Not-

K (ST) become equal if the formation is thick enough to accommodate both measurement intervals. As the measurement unit moves past the formation, the quantities K (ST) and LT increase in sequence. Anomalous measurements due to short borehole irregularities, the offsetting of the measuring devices within the borehole are made obvious by the absence of the above pattern.

the thinnest rock formation to be located. Wyckoff was cited primarily for its disclosure that the spacing between the detectors and source is varied depending upon the terrain and the ability to separate adjacent strata together with the reference to a separation of two to fifty feet. There is no suggestion there, however, that two intervals of different spacing be measured in connection with a single traverse of a bore hole, much less that both measurements be of receiver-to-receiver intervals.

[1] In summary, we think the examiner and board erred in finding the appealed claims obvious over the teachings of Athy and Wyckoff. The rejection is based on an improper piecemeal reconstruction of the prior art made in light of appellants' disclosure and not taught or made obvious by the reference disclosures. See In re Rothermel, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328.

The decision of the board is reversed.

53 CCPA 1375

Court of Customs and Patent Appeals

In re SPORMANN AND HEINKE

Appl. No. 7599 Decided July 21, 1966

PATENTS

1. Evidence — Judicial notice (§ 36.20) Pleading and practice in Patent Office—Rejections (§ 54.7)

Although Board apparently took judicial notice of "spray drying" and although court has heard of spray drying, it is not a technique of which court would feel free to take judicial notice; if Patent Office wishes to rely on what "those familiar with spray drying would know," it must produce some reference showing what such knowledge consists of.

2. Patentability — Invention — In general (§ 51.501)

Inherency of an advantage and its obviousness are different questions; that which may be inherent is not necessarily known; obviousness cannot be predicated on what is unknown.

3. Construction of specification and claims — By specification and drawings — In general (§ 22.251)

Claims must be interpreted in light of specification.

Particular patents—Alkali Sulfites Spormann and Heinke, Production of Solid Alkali Sulfites, claims 7 and 8 of application allowed.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Walter Spormann and Joachim Heinke, Serial No. 56,353, filed Sept. 16, 1960; Patent Office Group 110. From decision rejecting claims 7 and 8, applicants appeal. Reversed.

HERBERT B. KEIL and MATTHEW C. THOMPSON, both of Chicago, Ill., for appellants. CLARENCE W. MOORE (GEORGE C. ROEMING of counsel) for Commissioner of Patents.

Before RICH, Acting Chief Judge, MARTIN, SMITH, and ALMOND, Associate Judges, and KIRKPATRICK, Judge.\*

RICH, Acting Chief Judge.

This appeal is from the unanimous decision of the Patent Office Board of Appeals,<sup>1</sup> petition for reconsideration denied, affirming the examiner's rejection of process claims 7 and 8 in application serial No. 56,353, filed September 16, 1960, for "Production of Solid Alkali Sulfites." No claim has been allowed.

In essence, the invention is a process of producing alkali metal sulfites from alkali metal hydroxides and/or carbonates by spraying the latter, in aqueous solution, into a dry gas containing sulfur dioxide, the temperature and humidity of the gas being such as to immediately vaporize the water to the end that very little sulfate is produced. The sulfate results from oxidation of the sulfite but this apparently does not occur to any great extent if the sulfite is dry immediately upon its production. Sulfate is particularly likely to form when the treating gas contains a large amount of oxygen as do waste gases which it is desired to use for economic reasons.

Claim 7 reads (breakdown ours):

7. A process for the production of

\* United States Senior Judge for the Eastern District of Pennsylvania, designated to participate in place of Chief Judge Worley, pursuant to provisions of Section 294(d), Title 28, United States Code.

<sup>1</sup> Consisting of Examiner-in-Chief Duncombe and Acting Examiners-in-Chief Behrens and Wyman, the latter writing the opinion.



tion is then evaporated to about 50° Bé. and cooled to 40° C. whereupon sodium sulfite precipitates and is separated by filtration or decantation. What remains is, of course, still a solution. According to the patentees, the "crude separated sodium sulfite, containing small amounts of potassium sulfite, occluded caustic, and other impurities may, for some purposes, be used without purification, or it may be partly purified by washing, depending on what purpose it is to be used for."

Haywood discloses a method for producing calcium sulfite, especially as filler for paper, whereby a suspension of milk of lime, contained in an "absorber" tank, is whipped up as a fine mist by an agitator into an overhead gas containing water-insoluble calcium sulfite product falls back into the suspension. It is stated that the calcium sulfite suspension can then be pumped to a paper machine. Alternatively, the patent states:

If the material is to be shipped, it should first be dewatered to reduce it to a thick paste or a dry powder. However, if it is to be used near the source of manufacture in a watery suspension, it may be used directly \*\*\*.

As to temperatures in the "absorber" where the reaction between liquid and gas occurs, the specification says:

This temperature under ordinary conditions will usually rise to about 70° C. If desired, the combustion gases [from a sulfur burner where SO<sub>2</sub> is generated for the process] may be cooled to a certain extent by water introduced into the tower \*\*\*. This, however is not essential and may be dispensed with, if desired. There is no objection to introducing the gases into the absorber at a temperature of between 400° and 550° C. [Emphasis ours.]

Strickler discloses a process for producing sodium sulfites, an object of which is to prevent the formation of sulfates through oxidation, which is appellants' principal object. However, in the Strickler process, SO<sub>2</sub> gas is passed into a suspension of sodium carbonate in a saturated solution of sodium sulfite. A temperature of about 49° C. (120° F.) is disclosed.

Comparing appellants' process with the prior art, clearly the basic chemical reaction embodied in their process is old, as their specification acknowledges. Aydelotte et al. would also suggest to one skilled in the art bringing

"Appellants' process is considered nothing more than the application of this teaching of Friedrich et al. to a spray process such as is described in Aydelotte et al. Such a combination does not meet the provisions for patentability set forth in 35 U.S.C. 103."

The board said: "As recognized by the examiner, the rejection on Strickler appears to be cumulative but we will sustain the rejection as being one on Friedrich et al. in view of Aydelotte et al. or Haywood."

Friedrich et al. disclose a process for making sodium sulfites wherein a raw material such as sodium hydroxide or sodium carbonate is passed in a solid, powdered form through a horizontal rotating drum having radial plates or helical screw threads which cause the solid raw material to be turned and transported through the vessel. Sulfur dioxide gas is passed in countercurrent flow through the material within the drum. The solid, crushed raw material contains "a definite quantity of chemically combined or hygroscopic water" throughout the entire process, the amount of which "is so calculated in each individual case, that the heat of the reaction occurring on the absorption of the sulfur dioxide acid gas [SO<sub>2</sub>] will partially or completely evaporate the water, so that the finished product issuing from the apparatus will exhibit the required degree of moisture or dryness." The amount of moisture is apparently selected so that the final product will be free flowing yet dustless. The invention is described as an improvement over, and is contrasted with, the then known (1910) "wet" process by eliminating the equipment, power, and related expenses necessary for separation of product from solution.

Aydelotte et al. disclose a process for reducing the sodium hydroxide (caustic soda) content of solutions containing a mixture of sodium hydroxide and potassium hydroxide (caustic potash). The patentees' objective is to produce caustic soda-caustic potash solution mixtures of certain ratios which they use in making synthetic indigo, the sodium sulfite being a mere by-product. The mixture, in solution, is treated with waste gas containing sulfur dioxide, "either by bubbling the gas through the liquid, countercurrent spraying of the liquid into the gas, or other means until a test portion when evaporated to about 50° Bé., cooled to about 46° C. and filtered shows that the ratio of mixed caustic has been changed to 40% of caustic soda and 60% of caustic potash." The whole batch of solu-

difficult to carry out especially in a commercial process. It has also been suggested that the oxidation of alkali sulfite be suppressed by adding substances to the solutions which are capable of binding heavy metal ions. In such processes, however, the substances which are added to bind the metal ions become impurities which contaminate the alkali sulfite.

A method was found by appellants whereby alkali sulfite can be obtained from alkali hydroxide or alkali carbonate and sulfur dioxide without the concurrent formation of substantial amounts of alkali sulfate. The process is carried out successfully without the addition of materials which contaminate the sulfite. In the process, a finely dispersed aqueous solution of an alkali metal hydroxide or carbonate or bicarbonate is passed (sprayed) into a substantially dry gas containing sulfur dioxide. The temperature and relative humidity of the gas are maintained at such levels that the water introduced with the solution and formed by the reaction of the alkali metal and the sulfur dioxide is immediately vaporized. Thereafter, solid alkali metal sulfite is separated from the gas. The sulfite is formed instantly in the dry form and no longer is exposed to the action of oxygen which is present in the gas. In the subject process, unlike the prior art processes, it is possible to use waste gases as a source of SO<sub>2</sub>, which gases contain large quantities of oxygen (as much as 50 parts of oxygen per part of SO<sub>2</sub>).

In the process, therefore, a finely divided liquid and a gas are passed into the reaction zone and water vapor leaves the reaction vessel. The exact point wherein the transition from liquid to solid and vapor occurs is not precisely known. What is known is that the water must be vaporized in the reaction zone leaving only vapor and solid alkali metal sulfite.

Much of this discussion also appears in appellants' specification.

The examiner finally rejected the claims as unpatentable "over any of the following patents:

Haywood 2,210,405 Aug. 6, 1940  
Aydelotte et al. 1,982,241 Nov. 27, 1934  
Friedrich et al. 1,091,429 Mar. 24, 1914  
Strickler 1,023,179 Apr. 16, 1912

In his Answer, the examiner also said,

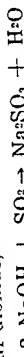
solid alkali metal sulfite which comprises:

passing a finely dispersed aqueous solution of an alkali metal compound selected from the group consisting of sodium hydroxide, sodium carbonate, sodium bicarbonate, potassium hydroxide, potassium carbonate, potassium bicarbonate and mixtures thereof,

into a substantially dry gas containing sulfur dioxide, maintaining the temperature of said dry gas at a level such that the water introduced with the solution and formed by the reaction of the alkali metal and the sulfur dioxide is immediately vaporized, and thereafter separating from the gas the solid alkali metal sulfite which is formed by the reaction of the sulfur dioxide and the alkali metal compound.

Claim 8 differs from claim 7 in two respects. (1) The finely dispersed solution of alkali metal compound is passed "into an upwardly directed stream" of the dry gas containing sulfur dioxide and (2) the temperature of the dry gas is maintained "between about 20 and about 150° C."

A typical reaction, producing sodium sulfite from sodium hydroxide and sulfur dioxide, is



According to appellants' brief (emphasis ours):

It has long been known, of course, that sulfur dioxide (SO<sub>2</sub>) can be reacted with alkali metal hydroxides or carbonates to produce sodium sulfite. Ordinarily, a solution of sodium hydroxide or the like is inter-acted with SO<sub>2</sub> gas. There is one major drawback to the use of the known processes. The formed sulfite tends to oxidize, especially in the presence of heavy metal ions. Sodium sulfite, for example, oxidizes to form sodium sulfate (Na<sub>2</sub>SO<sub>4</sub>). To prevent oxidation of the sulfite it was considered necessary to exclude atmospheric oxygen by using a concentrated sulfur dioxide gas containing relatively minor amounts of free oxygen or by carrying out the reaction between the sulfur dioxide and the alkali metal hydroxide in an inert atmosphere. The need for concentrated SO<sub>2</sub> gases made it impossible to use roaster or waste gases containing sulfur dioxide which are formed in great quantities during the production of sulfuric acid. The protective measure described above is

about this reaction by countercurrent spraying of a liquid containing caustic soda into a gas containing sulfur dioxide. The issue therefore is: would it be obvious to one of ordinary skill in this art to conduct the old reaction by such spraying under *all* the conditions set out in the claims and obtain appellants' results, i.e., would the invention as a whole have been obvious? The board said:

Taking cognizance of the fact that spray drying is an old expedient for obtaining a solute in dry form, we fail to see that it is unobvious to modify the method taught by Friedrich et al. so that a solution of sodium carbonate, for instance, is passed in fine droplet form through the gaseous current comprising sulfur dioxide instead of the finely powdered carbonate of Friedrich et al., particularly as Aydelotte et al. and Haywood do show, at least, that it is old to spray an alkaline hydroxide or carbonate solution through sulfur dioxide gas to obtain the corresponding sulfite.

Both appellants and Friedrich et al. obtain a dry sulfite and in such a simultaneous drying and chemical reaction process it is thought to be a mere difference in degree whether the water is present in such an amount as to dissolve the carbonate or is merely present as adhering water (Friedrich et al., page 2, lines 42 to 49). We note that Friedrich et al. only require that a sufficient amount of water be present to take place the chemical reaction to permit. Those familiar with spray drying know that dry products can be obtained even though a large amount of water may be present with the material to be dried.

Appellant urges that his product does not have much sulfate as a contaminant. *Though not mentioned by Friedrich et al.*, this seems to be merely an additional characteristic inherent in their process. In re Arnold et al., 50 CCPA 1166, 1963 C.D. 400, 794 O.G. 502, 315 F.2d 951, 137 USPQ 330. [Emphasis ours.]

[¶] The board's reference to "spray drying" appears to have been injected as something of which it was taking judicial notice, without having been mentioned in any reference of record. While Aydelotte et al. and Haywood both disclose spraying of some sort, neither spray dries. While we have heard of spray drying, it is not a technique of which we would feel free to take judicial notice. We are of the

read on this reference, distinguishing only—but admittedly—in their references to the use of a "solution" and in naming the alkali metal reactants. Haywood is interested in producing calcium sulfite as a paper filler. It is not an alkali metal compound and therefore outside the claims. It is produced from a suspension, not a solution, of lime (CaO) or limestone (calcium carbonate, CaCO<sub>3</sub>) brought into contact with a gas containing SO<sub>2</sub>. No effort at all is made to dry the product or the gas. In fact, the conditions are such that as fast as the sulfite is formed it falls back into the suspension whence came the raw material. The gas treatment takes place in an "absorber" which is a vessel with liquid in the bottom having an agitator which revolves in the liquid and splashes it upwardly from its surface where it is contacted by the gas. Since the gas is exhausted through a stack this is an "upwardly directed stream" within claim 8. We will not do so as this would distort the clear meaning of the claim when read in the light of the specification. Besides, gas flow in the absorbers is horizontal. Next, reliance is placed on Haywood's temperature disclosures. Here an obvious attempt is made to drag from its context something to meet claim limitations without regard to the true import of the claims. The argument is that if Haywood's gas is at 400° or 550° C., the gas would necessarily be dry and the water would necessarily vaporize immediately, as appellants' claims contemplate. But Haywood teaches that normally his gas will be about 70° C. This would not necessarily be dry, contrary to what is also contended, being below the boiling point of water. As to the higher temperatures mentioned, all that the patent says is that "There is no objection to introducing the gases into the absorber at a temperature of between 400° and 550° C." What effect this would have by way of vaporizing water is speculative and would depend on how much gas flows into the absorber how fast, how cold the suspension is, contact time between the mist thrown up by the agitator and the gas at whatever temperature it may have reached, heat loss from the absorber, etc. What goes on in the absorbers is a decidedly wet process having nothing to do with dryness. What goes into them is aqueous suspension and that is also what comes out of them.

[¶] Finally, the solicitor argues on the basis of Haywood's optional and later dehydration of his sulfite suspension to produce a shippable product that the immediate vaporizing and separation steps of the claims are met because it makes no difference that Haywood's supposedly dried particles fall back into liquid if ultimately they are again dried and separated. We think this is not taking the claims to mean what they say when interpreted as they must be, in the light of the specification. Motion Picture Patents Co. v. Universal Film Mfg. Co., 243 U.S. 502. The solicitor's use of Haywood amounts to reading things into the reference that are not there and reading things out of the claims that are there. When this has been done, concededly the claims still do not read on Haywood and since this patent does not teach anything about immediate drying after reaction it does not make the invention obvious when added to Friedrich et al. who teach nothing about reacting solution with gas.

Our view is that one faced with the problem of how to use oxygen-containing waste gases in the production of alkali metal sulfites would receive no suggestion from the references to spray a solution of the alkali metal compound into the gas stream under such conditions of temperature and relative humidity as to cause all water present to be immediately vaporized. This is the claimed invention and in our opinion its basic underlying concept is not to be found in the prior art of record.

The rejection of claims 7 and 8 is reversed.

Court of Claims of the United States  
MINE SAFETY APPLIANCES COMPANY  
et al. v. UNITED STATES

No. 807-60 Decided July 15, 1966

# PATENTS

1. Title — Licenses — In general (§ 66-401)

One having license under patent has complete defense to charge of infringement when patent or invention is used in accordance with license.

2. Title — Licenses — Construction (§ 66.407)

Contract provision, in granting to Government a license to practice "each invention, improvement or discovery con-